Standards Implementation Workgroup
Draft Transcript
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Presentation

Judy Sparrow – Office of the National Coordinator – Executive Director
Good morning, everybody, and welcome to the implementation workgroup, which is a workgroup of the HIT Standards Committee. This is a federal advisory committee. It's being conducted in public, and there will be opportunity at the close of the meeting for the public to make comments. Also, all of the presentations will be up on the ONC Web site. Just a reminder for the workgroup members to please identify yourselves when speaking because we do have a number of people on the phone and on the Web listening in. With that, I'll ask the workgroup members to go around the table and introduce themselves beginning on my right.

John Derr – Golden Living LLC – Chief Technology Strategic Officer
My name is John Derr. I represent Golden Living, and also the long-term post acute care providers.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Anne Castro, BlueCross Blue Shield of South Carolina.

David Kates – Prematics, Inc. – Vice President Product Management
David Kates with Prematics.

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
Carol Diamond, Markle.

Linda Fischetti – VHA – Chief Health Informatics Officer
Linda Fischetti, Veterans Health Administration.

Aneesh Chopra – White House – CTO
Aneesh Chopra, the CTO.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Liz Johnson, Tenet Healthcare.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Judy Murphy from Aurora Healthcare.

Cris Ross – MinuteClinic – CIO
Cris Ross, CVS MinuteClinic.

Lisa Carnahan – National Institute of Standards Technology – Chair
Lisa Carnahan with the National Institute of Standards & Technology.

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
Jamie Ferguson, Kaiser Permanente.

Jim Bialick – Genetic Alliance – Health Systems Coordinator
Jim Bialick, Genetic Alliance.

Judy Sparrow – Office of the National Coordinator – Executive Director
And I believe we have a number of members on the telephone. Wes Rishel, are you there?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst
Yes. Can you hear me?

Judy Sparrow – Office of the National Coordinator – Executive Director
Yes, we can hear you. Anybody else on the phone?

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. This is Dixie Baker.

Judy Sparrow – Office of the National Coordinator – Executive Director
Dixie, hello. I'll turn it over to Aneesh Chopra, the chair.

Aneesh Chopra – White House – CTO
Thank you very much, Judy. Thank you, members of the committee, for adding one more to your schedule. This is a full-time job, so I'd first thank your employers and families for allowing you to support our very important priorities.

Today is about listening. It's about sharing, and it's about understanding what we can do to treat that cycle of information from what's happening in the field to where our policymaking is going, to back out into the field so that we could actually see this movement take hold. We have had an incredible set of panels that are arranged today to give us input, as well to even share some resources that might be helpful to others who are not only listening to the testimony, but actually to take advantage of some of the capabilities that are being described, so that they can achieve meaningful use and adopt our standards in a more efficient and timely manner.

I'm going to immediately turn it over to Liz, who essentially organized today's event. But before I turn it to her, I wanted to thank Cris Ross for getting the conversation going on our blog. I hadn't heard of the motorcycle guy, but I learned about his comments on the blog, which were pretty insightful, as were several others, so we had a kickoff essentially virtually to today's session. Cris, for your leadership on the blog, getting us started, much appreciated. Liz, why don't you walk us through the day, and then we'll dive right into this robust first panel?

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Great. Thank you, and welcome. I echo the sentiment that Aneesh said. This is really about us listening to you. Many of you have had the opportunity to really start down the meaningful use road, and we want to hear what you're doing, what's working for you. This is really a chance to talk about innovative approaches, and you have a panel full of people that are very, very anxious. Thanks to every one of the panelists for joining us. We know you've taken time out of your busy schedules. The response that we got was outstanding, and so we really look forward to it.

Linda is going to read a panel from the public sector, and she'll introduce you to those members. Then we'll have two panels on implementation. We've asked the panelists to not only come from a variety of provider organizations, but to bring their vendor partners, which I think will give us an interesting twist on the way we look at the world, and then we'll end up with Cris running an innovation panel, so we can

really look at consumer engagement and other types of areas, so we'll go right from introductions, and get to the real work. And I'll turn it over to Linda.

Linda Fischetti – VHA – Chief Health Informatics Officer
Thank you, Liz. Thank you, Aneesh. For our first cycle of information, as Mr. Chopra calls it, we start with a public sector panel. I will limit the comments to five minutes, as per the guidelines that Judy sent out prior, because I do want to allow lots of time for conversation at the end. Our first panelist is Dr. Doug Fridsma of the Office of the National Coordinator within Health and Human Services.

Doug Fridsma – Arizona State – Assoc. Prof. Dept. Biomedical Informatics
Thank you, Linda. I have included a number of slides in your packet. We won't have time to go through all of them during the five-minute period, but I wanted to talk really about two initiatives that are going on within the Office of the National Coordinator. The first is an introduction to this group about NHIN Direct, which is a direct result of the input that we received from the federal advisory committee, the NHIN working group, in our attempt to really broaden the approaches that we take to interoperability. The second thing that I want to mention as well is how we want to take NHIN Direct not only as a way of sort of a new approach that we take to developing interoperability specifications, but fitting it into a larger framework that we think will help us integrate this with existing interoperability solutions in the existing NHIN as well.

Just by way of background, the NHIN working group was established underneath the Health IT Policy Committee in the fall of 2009, and was charged with coming up with a set of recommendations and policies, technical framework for the NHIN that would help foster innovation and be open to everybody to participate. They gave us essentially four significant recommendations. The first was to create policies that support a less complex exchange, but they emphasized to us the importance of continuing to support the current exchange models and making sure that those were compatible with this less complex exchange.

They wanted us to focus on meaningful use and identify the core services and specifications to support meaningful use. They brought up the notion of enabling organizations that would allow people to exchange information in useful ways and what those would look like. And they really wanted us to also take a look at the role of government, in the sense, enabling trust, not getting in the way of things that work, creating innovations to accelerate interoperability, and supporting things out in the real world that we can test.

We took that to heart, and we recognized that interoperability is not one size fits all, but in fact there's lots of different ways to achieve that, and that there's going to be a broad range of needs, including simple local applications and then more robust exchanges with federal agencies or national entities. To date, NHIN is focused on supporting more complex exchanges within the federal agencies and within large, nationwide organizations. And so, the work that I'm going to tell you about today really is a way of looking at what are the minimum requirements to be able to exchange information while maintaining that trust fabric in the exchange of that information, the privacy and security.

NHIN Direct is something that we've just sort of announced, and it represents really an approach that we'd like to take within the ONC about how standards, specifications, and policies are all sort of developed. The NHIN Direct is an ONC sponsored project to look at that, the policy standards and services, that will enable the Internet to be used for the simple, direct, secure, and meaningful exchange. When we got approval to launch this project about 12 days ago, we actually, by the end of the first conversation, had registered all of the URLs and the domain names that we needed, so NHIN Direct was

registered before the first meeting ended. So we're using wikis. We're using blogs. We're using sort of open source and open content.

We're going to be following all of the rules that the HIT Standards Committee here has implemented. We want to keep it simple. We want to design for the little guy. We want to make sure that we do this in an open and transparent and collaborative process.

We have an extremely aggressive timeline with this. Again, in keeping with our motivation to move things along. In January, we received recommendations for the NHIN working group. In February, we established our team, blog, organizational structure, and announced at HIMSS just last week.

We intend by May to have our draft implementation specifications supported by external collaborations, the blogs, and the wikis. By June, we have the intention to begin real world experiments, and we need to, by the end of September, have some final set of implementation specifications to support this exchange.

We have two ways that people can get involved in this. We want to make sure that there are a group that we're calling the implementation group that will participate. This group really has skin in the game. These are the folks that have committed to putting in real resources, participating in the meetings, and actually deploying these in some fashion in the real organization.

However, we're not limiting this group, and anybody can participate. Those that don't have the resources are just interested in providing comments. We'll be able to participate via blogs, wikis, contributions of code, or other things to help support this. And they're invited as well to deploy and evaluate the resulting standards and specifications. NHIN Direct, the project, is located at nhindirect.org, if people want to take a look at it. And we hope that this will be a way and a mechanism for us to really engage in the user committee and get feedback on how we do things.

This slide here describes a little bit about how we're going to try to get all of this coordinated. I think one of the things that is clear is that there are two approaches to doing this. One is that we let everybody kind of do what they want, and you have 1,000 flowers blooming. And the other is you do it top down, and it's difficult to sort of integrate. And so what we want to do within the ONC is drive this bottom up innovation driven through use cases in the blogs and wikis and direct implementation within a coordinated framework.

We will be using this particular process, with taking use case development as part of NHIN direct, harmonizing those things in a core set of concepts, developing implementation specifications or reference implementations, and driving that all the way to certification and testing. The NHIN direct project will be the first approach to kind of using this coordinated framework to help us manage the standards, the interoperability specifications, and everything else that we need to do.

This slide is shamelessly stolen from Aneesh Chopra, but it really, I think, is a good summary of what we're trying to do. We don't want command and control, and we don't want 1,000 flowers blooming. We want focused collaboration. I think, if we take NHIN Direct, plus our interoperability framework, we believe that we can achieve that focused collaboration in which we have prioritization, transparency, engagement, and rapid results.

To learn more, you can use the NHIN e-mail at hhs.gov or you can contact either myself, Doug Fridsma, or Arien Malec, who is the project coordinator for NHIN Direct as well. With that, I'll end. Thank you.

Linda Fischetti – VHA – Chief Health Informatics Officer

Thank you so much. Our next panelist is Hunt Blair, Deputy Director, Healthcare Reform, Office of Vermont Health Access.

Hunt Blair – OVHA – Deputy Director

Good morning. Thank you very much for the opportunity to speak to you this morning about Vermont's approach to meaningful use. Vermont is a small state about the size of many counties, 600,000 people, so it could be that part of what we're talking about here is applicable not necessarily to other states, but at a regional level.

Meaningful use of health information technology is embedded in our overall comprehensive approach to healthcare reform in this state, which is really about bringing systemness to our less than systematic healthcare delivery system. We're taking that approach within state government as well. The Division of Healthcare Reform is part of the state Medicaid agency, and we're the lead, both for the CMS work, as well as for the ONC Section 3013 cooperative agreements. We're working very closely in partnership with the statewide health information exchange called VITL, Vermont Information Technology Leaders.

A lot of our work is about breaking down the barriers and making some common sense connections of the dots. We see all too often, as I'm sure everybody in this room has experienced personally the disarray within our healthcare system. We'd begun a pilot of community health teams paired with primary care medical homes, but also including mental health, behavioral health, specialists, hospitals, social workers, and other community-based organizations.

These teams are linked to provider practices with a We based data repository that includes registries, visit planners, population reporting tools, case management, and care coordination fields that can be populated, both at the medical home and by the health team members across the community. And all of that is tied together through our statewide health information exchange.

The state insures that participating clinicians and provider organizations utilize a common structured set of data elements that creates a statewide health information architecture designed to meet the principles of meaningful use. The architecture includes the expanded use of electronic health records, electronic health records and hospital data sources feeding into the statewide HIE, which then feeds into the clinical registry that I mentioned.

The benefits of this comprehensive structured approach accrue both at the individual practice level, providing clinicians with tools to manage their patients more systematically, and for community and state level public health surveillance, patient management, and care coordination. The state's role is to insure that every practitioner in Vermont has the opportunity to participate successfully in the provider incentive programs and to do so in a way that further enhances our state healthcare delivery goals of systemness.

Vermont's delivery system reforms are built on the premise of ubiquitous, multidimensional, information exchange across a robust deployment of HIT systems. We started pretty aggressively with a pilot phase of development. And with the new resources from CMS and ONC, we look forward to building out statewide implementation over the next three years. Our roadmap includes extending the full, bidirectional connectivity to hospitals in every hospital service area in the state by the end of 2011. And, at the same time, we'll be building out our medical home and community health team model, which is called the blueprint for health.

We're doing a coordinated and very aggressive outreach to eligible providers, and we're also including in our overall vision not just hospitals and eligible physicians and providers, but really the full continuum of healthcare. Our overarching goal for our delivery system reforms, which we think are pretty much the

embodiment of what you're looking for with meaningful use, is a system where fragmentation of care is an ever event. We look to having a coordination and integration from primary care to specialty care, from physical health to mental health, pediatric and geriatric care across all institutions in continuum. As it matures between now and 2015, our health information exchange will be touching all institutions that are providing care, as well as our state government agencies in the health and human services area. Thanks.

Linda Fischetti – VHA – Chief Health Informatics Officer
Thank you so much. Our next panelist is Jessica Kahn….

Judy Sparrow – Office of the National Coordinator – Executive Director
She's in route.

Linda Fischetti – VHA – Chief Health Informatics Officer
Then Kim Davis-Allen, may we jump down to you? You're the director of Alabama Medicaid.

Kim David-Allen – Alabama Medicaid – Director
I would be glad to. I apologize for reading, but I want to make sure I get all of my points in, and I had very specific questions, so I was going to answer my questions, so let's go.

As a state Medicaid agency, our agency, our role is to implement the payment incentive program and, based on our previous experience through the Medicaid Transformation Grants, we have a different perspective than most. Through the work that was made possible through our transformation grant, the Alabama Medicaid agency has worked for the last two years trying to get providers to adopt electronic health records, as well as kind of conform our state operations into implementing such a program.

Let me give you a little background. Now we have built a system, our electronic health record system, known as QTool, which is Web based, therefore, it doesn't require any special equipment on the provider's part, and we combine payer information. We have a very unique relationship in Alabama with BlueCross. We're able to take our information and put it into a single application, and we actually push that information into existing EMR systems.

Did I mention all of this is at no cost to the providers? Provider adoption has been very minimal. The sad truth is only when we started paying upfront for use of that information did providers actually begin to use the system. Now we're at the crossroads where that novelty of an electronic health record is becoming the standard.

Before I talk more about the how of what we are going to do, I want to make the point that states are not opposed to health technology vision. Standardization is not necessarily evil. It is a good thing that really truly supports and allows innovation. But with standardization, there is a need to have the states at the table establishing the standards, not commenting on the backend, not responding, and not just trying to get them implemented. Buy-in is easier, and avoiding mistakes is differently easier when you have state government at the table in the design phase.

But as the agency designated to do this, we will get it done. We realize that our work will actually begin with a lot of education. We must first help providers and our patients understand the why of health information technology. It is our responsibility to set the vision and outline the goals of what our state will realize through the adoption and utilization of health information technology, and we are approaching that responsibility seamlessly, in coordinating the work of establishing our statewide exchange as the primary mechanism by which providers can achieve meaningful use.

We are educating our providers about the advantages that HIT will offer in terms of clinical decision support and patient knowledge. We are educating our patients that their participation in such an exchange will allow them to be treated appropriately regardless of the where, when, and why of needing services. We are educating our public that health information technology will allow us to get a handle on out of control healthcare costs, while actually increasing quality and access. Education is the cornerstone of what we have to do.

The problem is that providers can't get past the process. The questions surrounding the meaning, timing, and impact of meaningful use are foremost in providers' minds. With so much still undecided, it's difficult to respond, especially when so much of the undecided affects a provider's participation. For a successful program, we have to appreciate what we are really asking of the eligible provider. The transition to any form of electronic health records is tremendous, and the reality is that many providers do not think the value will ever outweigh the cost.

At this point, providers are confused and very dismayed. Many of our traditional Medicaid providers have not been trained to use technology in documenting patient care. They prefer the human touch. So even if they understand the why, it is our responsibility to help them translate the why into practice. So it will be necessary for the state to develop a comprehensive training program that accounts for the provider's unique needs. The support services through the regional extension centers will be pivotal, but that's not going to be enough. The state has responsibility to its providers as well.

To begin the process of program implementation, the state will have to define program parameters that are transparent, accessible, understandable, and straightforward. It is our intent that as many providers as possible will be able to participate in the program as quickly as possible, but we're not rushing to be the first to have a program implemented. Rather, we intend to be very thoughtful in our approach and program design will start with a thorough understanding of the regulations. But there are still many critical decisions to be made, and we realize that, and we appreciate everybody working together to make those decisions. The balance is setting the bar too low and setting too high is totally understood by states.

A new era for many states will also be the consistent reporting of quality measures. It's a good thing, but it's something that's different, and we don't want to collect data just for collecting data's sake. So there's not a single magic bullet that states can take to implement and help providers achieve meaningful use. It will be critical that providers are involved, states are involved, and the achievement of meaningful use will take stake competency, state thoughtfulness, state willingness and, finally, a belief on the part of the state itself that the value of health information technology will far outweigh any of the burdens.

Linda Fischetti – VHA – Chief Health Informatics Officer
Thank you so much for your comments. Jessica Kahn, are you prepared to submit your testimony now? Thank you.

Jessica Kahn – CMS – Project Officer
Thank the metro today actually. Good morning. I'm Jessica Kahn. I work for the Centers for Medicare and Medicaid Services in the Center for Medicaid and State Operations. My comments have to do with the Medicaid program support for meaningful use and quality reporting overall. Aside from crafting the rule, which I think is pretty supportive actually, we have a few things that we wanted to highlight for everyone today in terms of how we plan to look at the state's implementation of these programs, and how they're supporting Medicaid providers, and then in our collaboration with the Office of the National Coordinator.

All of these things, I should just say as a caveat, most of these things are in our proposed rule. These are our plans, policies, and so the caveat being that they're obviously subject to change with our final rule. I have to say that, or I'll lose my job.

State Medicaid HIT Plan, let me start with that. We are requesting from states a document that is their blueprint for how they are going to implement the EHR incentive program. And, within that document, they will reflect an environmental scan, where they are in terms of HIT EHR adoption, what things are in use, how close are their provider populations already to adoption and implementing and using EHRs, much less meaningful use, and then where they think they have a role in being able to provide technical assistance or perhaps design interfaces between Medicaid data and health information exchange or data repositories, warehouses, those kinds of things.

The crux of the state Medicaid HIT plan is that we have 90/10 matching funds, as I'm sure you're aware. And there is not a cap on the 90/10 matching funds, so it could be significant money, as long as the state has the 10%, and it comports with what we think is the best use of that money, and I'll get to that in a minute.

Congress said there are three ways that the states can use that 90/10 money. The first is to implement the program, including tracking meaningful use. The second is to oversee the program, making sure the right payment has gone the right providers for the right reason. The third reason, which doesn't get as much limelight, is in order to support efforts to promote EHR adoption and health information exchange. Right there, the state Medicaid agencies have, as a purpose statutorily, the role of promoting EHR adoption, meaningful use, and HIE. Therefore, we think that that's an appropriate use of their 90/10 matching funds. But as you've heard from, I'm sure, already this morning and in part of your work, there are a lot of players on this playground, and so we're not interested in duplicating effort, and we're looking to see where states can leverage that money as opposed to doing something completely out on their own.

I should say that Kim's project and the transformation grants; we're CMS's laboratory for states to kind of do some of these things out on their own where there weren't other payers at the table. This is all pre-HITECH, and so we kind of know how that goes and where that path takes us, and there are advantages and disadvantages. But, at this point, one of our core guiding principles for how we expect states to support meaningful use is that they're not the only ones sitting at the table. That they are looking at other payers, other federal funds, and this is all leveraged effort. Not that we don't love the Alabama model.

The state Medicaid HIT plan is also going to contain states' proposals, if they so choose, to take the meaningful use floor, which is proposed as one … definition for both Medicare and Medicaid, and perhaps tweak it if they so see fit. And they might not do this necessarily now. The Medicaid program is for ten years. So they might decide, once things are a little more up and running, there are more resources, technology has evolved, then they're ready to do this in, say, 2014 or so on.

But I want to just sort of clarify for people because this seems to be something that merits clarification, and that's that we have this lovely sister agency, Office of National Coordinator, that's spending a lot of time developing EHR certification criteria for meaningful use, and our intention is not to throw a wrench in that by allowing states to propose a meaningful use definition that would increase the functionality requirements of an EHR and, therefore, rendering their program moot. So the idea is that they could take the meaningful use definition perhaps, and it's not so much add to it as tweak it for their state specific scenario. What we talk about in the rule, I'll give you some examples.

If I'm a state, and I have prioritized certain key conditions as population based efforts: obesity, diabetes, those kinds of things. So there's a meaningful use objective about being able to track certain conditions and your EHR being able to highlight certain conditions, but it doesn't specify which ones. Perhaps if I'm that state, I would propose to CMS in my state HIT plan, in order to comport with our other quality measures, we want it to highlight these specific conditions. And we're going to give our providers extra support in order to be able to meet that meaningful use criteria that's now a little bit more tailored to their state. So they can't just sort of raise the bar and then not help also. We're looking for ways that they're going to produce outreach for their providers and say this is the meaningful use floor, but I'll pick a state—Alabama—might want to go a little bit above. Sorry Kim. Alabama might want to go a little bit above, and this is why. And it's not necessarily for onus, and all, of course, subject to CMS prior approval.

The other thing we're looking at the state Medicaid HIT plans for is where there are obvious needs for technical assistance, so we can drive them towards existing resources such as the regional extension centers or, if it's priority population for us that is not addressed by the regional extension centers, such as certified nurse midwives or dentists, we might help them find technical assistance so that those providers could become meaningful users as well. And I could go on, but I think I have it in the summary documents. But the idea is that we are using these as blueprints to determine where we can assist the states in being success because that's the point of the 90/10 money is to be a direct accelerant to the success of their program, the EHR incentive program, and actually pay incentives.

Linda Fischetti – VHA – Chief Health Informatics Officer
Thank you for your comments.

Jessica Kahn – CMS – Project Officer
Sure.

Linda Fischetti – VHA – Chief Health Informatics Officer
Ken Buetow of the National Cancer Institute within Health and Human Services.

Ken Buetow – caBIG & National Cancer Institute – Director
Thank you very much. I'm pleased to have the opportunity to describe the National Cancer Institute's commitment to enabling meaningful use and quality reporting. And our strategy for technically achieving this through the use of interoperable, modular, well specified services tested through open source reference implementations developed in partnership with the consumer, provider, and vendor communities.

I realize that many of you might not immediately think National Cancer Institute when considering health information technology and meaningful use. We are here because the NCI recognizes that care and research are two sides of the same coin, somewhat arbitrarily separated at a cost to both. Moreover, the NCI is charged by the National Cancer Act with coordinating the nation's cancer program, giving us a key role in convening and coordinating all the stakeholders in cancer. We are explicitly charged with collecting, analyzing, and disseminating all useful data for prevention, diagnosis, and treatment of cancer. Arguably, our participation is not just a good idea, but the law.

But to make those functions operational in the digital age, NCI works with academic and commercial constituencies to achieve these goals through information technology. More specifically, we developed standards-based specifications, and develop and deploy reference implementations to support the broader cancer community. Recognizing that actions speak louder than words, we have been working in partnership with the cancer community under the banner of caBIG, the cancer biomedical informatics grid, to create a distributed IT framework that enables data liquidity.

Our efforts to date have centered at NCI designated cancer centers where care and research are conducted side-by-side, and also at 15 community cancer centers where the other 85% of cancer patients are seen, and where the handoffs between primary and specialty care must be seamless. We've also been collaborating with members of the advocacy community to assure and create consumer centric tools.

With respect to meaningful use, we are working with the American Society of Clinical Oncology to define an oncology extended electronic health record. Through this effort, and in partnership with the vendor community, the collaboration has defined the key functionality necessary to support cancer care, including measuring quality of cancer care and treatment. More concretely, the NCI, in collaboration with our community and interested vendors, is creating a periodic table of services, currently comprised of almost 40 individual modules, and implementing these modules through semantically aware services oriented architecture to support integration of the divergent types of data.

This SOA is developed using the HL-7 services aware interoperability framework to insure services can be specified from both an operational and interoperability perspective. And we are also using this framework to create open source reference implementations that can serve as a common front door. And these front doors then service multiple APIs: Enterprise JavaBeans, Web services, REST APIs, and our semantically aware platform to see a grid framework.

Lastly, we are building software development kits that facilitate the rapid creation and deployment of these types of services. I assume it's easier to understand what we're doing though, rather than in this sort of intellectual framework that, through a concrete example, I'll call out the patient data outcome service or POD service that we're creating to support patient data outcomes. This POD service is in fact a service of services that captures demographics, diagnosis, treatment, outcome, key components of a treatment summary.

Following our iterative incremental developmental process, we have a 0.1 version of this already released for early testing, and the necessary specifications for the next release are already publicly available at a wiki site available in the written material that you have. A full production release will be available at the end of this month. This community defined, common front door, open source, reference implementation module provides key capabilities needed to support meaningful use, namely a record can be electronically shared with patients within 48 hours of a request.

To that end, SCIC Health Solutions Business Unit and Microsoft Health Solutions Group are developing a framework necessary to demonstrate the ability of clinicians and cancer survivors to engage in the collection and sharing of provider reported consumer controlled outcome data, so at the discretion of the patient, PODs would provide a treatment summary to patient controlled HealthVault record. A provider could also push a record to an amalgam-based warehouse so that they could track patterns of care and quality. And, with authorization, the patient could share this information for specified research purposes.

In summary, NCI is officially tasked with collecting and disseminating cancer knowledge globally. It is building services-based modular units to insure data liquidity. One example is the patient outcomes data service, one of a portfolio of enterprise services that enables the medical community to demonstrate meaningful use and quality reporting.

Linda Fischetti – VHA – Chief Health Informatics Officer

Thank you so much. Our final panelist today, Kathleen or Kamie Roberts.

Kamie Roberts – NIST – IT Lab Grant Program Manager
I go by Kamie.

Linda Fischetti – VHA – Chief Health Informatics Officer
Kamie Roberts, thank you.

Kamie Roberts – NIST – IT Lab Grant Program Manager
Thank you for the opportunity to talk today about NIST's efforts in support of meaningful use. I will address several areas of focus for NIST, including test methods, the testing infrastructure, certification, security, and usability, all of which help to insure that the health information of American's is exchanged safely, securely, reliably, and only to appropriate sources, and that the standards used are appropriate, consistent, and effective.

In support of a health IT certification program, NIST is developing conformance test methods to insure compliance with the meaningful use technical requirements and standards. In developing the test methods, NIST has conducted analysis of the interim final rule published in the federal register January 13th, including the functional and interoperable requirements, the reference standards, and assumptions that may influence the selection of specific test methods for the scope of testing. The test methods are being rolled out on an incremental basis with the first set having been released last week at HIMSS. The others will be rolled out according to the schedule found on the NIST health IT standards and testing Web site. NIST is seeking public feedback on the test methods and looks forward to a dialog on them. The test methods will be used by the testing laboratories and the testing component of both the temporary and permanent certification programs.

Secondly, NIST is leading the development of the core health IT testing infrastructure that will provide scaleable, multi-partner, automated, remote capability for real world, current and future health IT testing needs, including robust conformance, interoperability testing capabilities. NIST is working with stakeholders to establish an utilize the testing infrastructure and, in particular, NIST is currently developing the testing tools to be included in the testing infrastructure that will support the meaningful use test methods discussed previously.

As indicated in the HITECH Act, ONC has consulted with NIST on all aspects of developing a proposed certification program, and will continue to consult and collaborate with NIST during the implementation and operational phases of both the temporary and permanent certification programs. As mentioned above, NIST is developing the test methods and tools that will be used by testing laboratories in the testing component of both certification programs, and ONC has stated its intension to use NIST national voluntary laboratory accreditation program to perform the accreditation of testing laboratories.

Turning to security, NIST has issued information security standards and guidelines that either directly support or are called out in the requirements of the meaningful use criteria, the standards and certification requirements, and other provisions of the HITECH. NIST has issued many publications that are supportive of the HIPAA security rule. NIST special publication 800-66 provides a resource guide for implementing the requirements of the HIPAA security rule. This includes mappings between the requirements or the security rule and NIST information security standards, guidelines, security controls, and technologies.

Special publication 800-66 also provides a more detailed look at particularly important areas of HIPAA security rule, including risk assessment and analysis, contingency planning, and remote access to electronic protected health information. NIST has also issued guidelines that directly support the meaningful use risk analysis measure. NIST special publication 800-30 is our risk assessment guideline,

and NIST special publication 800-39 is our publication on enterprise wide risk management. These documents are available from the NIST Web site.

Much like other disciplines, NIST has developed standard reference material and test and validation tools for security protocols and technologies that are either specifically called out in HITECH or essential to satisfying the requirements of HITECH. Examples include the federal information processing standard or FIPS 140-2 validation processes, and the secure hash algorithm or SHA reference material. The advanced encryption standards and SHA have been called out specifically in the certification criteria. NIST has issued standards and guidelines for other specific protocols called out in other HITECH implementation rules, including the secure socket layer, transport layer security, Internet protocol security, all of which are protocols for protecting data in transit.

Finally, looking forward, we expect that usability will become an integral part of meaningful use in the future. Usability results in effectiveness and efficiency focusing on the end user. To achieve this, NIST has developed a roadmap to help insure universal usability of health IT. NIST, in collaboration with ONC, ARC, and others, has initiated and will execute extensive research and development in human factors of health IT. The research will focus on developing the usability framework, establishing usability and accessibility guidelines, and determining specific objective criteria for usability evaluation. The research and development will result in concensus-based usability standards and evaluation procedures.

In summary, NIST is developing the measurement tools and prototypes and contributing to voluntary standards activities to advance the use of health IT in healthcare systems in achieving an interconnected electronic health information infrastructure. Thank you. I look forward to answering any questions, and I will utilize Lisa Carnahan, who works with us, if the questions get too hard.

Linda Fischetti – VHA – Chief Health Informatics Officer
Thank you all. Before we tee up the questions, I just want to say that I was very impressed with the quality of the testimony, as I was reading it in this beautiful day that we had in D.C. yesterday, and as I was sitting outside in the sun. I can tell that there was a great amount of work that went into answering the questions, and it was very thoughtful testimony, so I want to thank you all for your efforts in bringing that together.

Additionally, for some of you who might have clipped your verbal comments to stay within the five minutes, we did receive your full testimony, and we have read it, and so both your written and your verbal testimony will be part of the public record. With that, let's go ahead and open it up for questions.

Aneesh Chopra – White House – CTO
Would you mind if I indulged on a few upfront, and then I'll promise to be quiet? I have one for each of the panelists, if I could, but maybe I'll get start with Dougie Fresh. Doug, would you just take a moment to elaborate for those listening in one or two examples of the kinds of "use cases" that you're envisioning the NIN Direct collaborative might enable? In other words, what implementation headache that Judy, Liz, and the other providers around the table are fearful of could you help them enable as part of their plans, if you don't mind, one or two examples without pre-committing anything?

Doug Fridsma – Arizona State – Assoc. Prof. Dept. Biomedical Informatics
Well, I think, first, let me just preface this by saying, as part of this process, we hope that the use cases would be driven from the community and the community will help us to prioritize and identify those things that are useful. I certainly could come up with a list of the ones that I think are important. But ultimately, for us to be successful, the community needs to drive that, and that's really part of what this process is all about.

Now that having been said, the testimony or the recommendations that we got from the NHIN working group included approximately four different use cases that they wanted us to take a look at. One was provider-to-provider, things like patient care summary and coordination. Another was provider-to-laboratory or from laboratory-to-provider so that we could exchange laboratory information. A third was related to provider to hospital so that discharge summaries and the like could be managed. Finally, provider-to-patient or to personal health record was another one.

Now all of those use cases are sort of bidirectional. I think also there's been some discussion about provider to electronic prescribing or pharmacy as well. But all of those are bidirectional. All of them are intended to sort of have an exchange between them. And that's sort of the initial working charge. We're anxious to see from the community how they prioritize them, how they see them related to one another, what are the overlaps, and what are the ones that they perceive as being the most useful moving forward.

Aneesh Chopra – White House – CTO
Just one quick reaction to that: As you look at the services that we're thinking about deploying, in a sense, the notion is, if you recall, folks, on the last hearing we held, the physician who had a patient that moved from Virginia to Arizona, but just didn't know physically how to send the CCR on the same software platform between the two, and literally exported the file and e-mailed it. Presuming, Doug, this could help create these self, secure methods of just that simple transaction, is that a fair summary?

Doug Fridsma – Arizona State – Assoc. Prof. Dept. Biomedical Informatics
That's correct.

Aneesh Chopra – White House – CTO
Thank you for that. If I may, just a couple more because I'm having so much fun: Hunt, if you don't mind, because you're sort of further ahead of the game than a number of your state peers, is there a particular pain point, not to put you on the spot, but maybe I will? If you feel as if this body could help you, you know, gosh, there's this thing that the providers, now that we're sort of engaging with them and hearing their feedback about making the exchange mechanisms happen, where you're feeling like if I had a little bit more support material, we could enable that service. I'm sure you're working on a bunch of things, and you described the roadmap and the vision and all that. But if you turned to this room and said, you know, if you all could help me on this piece in particular, maybe it's an e-prescribing issue or who knows what, do you have one that sort of bubbles up to say, this is a nagging challenge we'd love input on?

Hunt Blair – OVHA – Deputy Director
Sure. I think that one of the areas that we, as we get under the hood and start really working on interoperability, that we've run into is that a lot of platforms – I mentioned that we have the set of standards based criteria that we're basically exporting from EHRs to our registry. It's an extraordinary amount of work, pretty much hand built each one. A lot of what is claimed to be interoperable is not so far interoperable. So I think that really putting a lot of emphasis on that, I'd give an example. We were just having a meeting last Friday about interoperability with the immunization registry that the state operates. To our dismay, one of the things that the feedback that we got was that while a lot of EHRs can push out an immunization and vaccine data in HL-7 format, they can't receive it. As I understand it, at least according to the folks at our exchange, they weren't aware of any EHRs in the state that actually have that capability operable.

Aneesh Chopra – White House – CTO
To receive and import the immunization record?

Hunt Blair – OVHA – Deputy Director
Correct, so I think that what it reminds me of is that a lot of times, at least if you get a model of car that doesn't have all of the features that the top level does, and there are little pieces of plastic on the dash board with, you could have a switch here. Sort of a lot of the EHRs seem to have features to be coming. And I think that that's something that would be useful for this group to surface and put some pressure on.

Aneesh Chopra – White House – CTO
Hunt, can the state public health agency or the local, however you're governed--

Hunt Blair – OVHA – Deputy Director
At the state.

Aneesh Chopra – White House – CTO
--accept those immunization pushes?

Hunt Blair – OVHA – Deputy Director
Yes, it can.

Aneesh Chopra – White House – CTO
And is the implementation collateral associated with how they accept them some kind of sharable asset? Is there a spec of the implementation of the receipt of that that's shareable, or is that some proprietary code by some…?

Hunt Blair – OVHA – Deputy Director
No, that's a standard transaction code, which we are now completely outside the realm of my actual expertise.

Aneesh Chopra – White House – CTO
But you'll go back and ask if that type of material could be shared for your peers around the country?

Hunt Blair – OVHA – Deputy Director
Yes.

Aneesh Chopra – White House – CTO
Jamie?

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
Sorry. Go ahead.

Aneesh Chopra – White House – CTO
I'm having fun, man.

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
No. Please go ahead.

Aneesh Chopra – White House – CTO
You're preparing … do you mind if I rip on, and I'll be quiet after that?

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
Go ahead.

Aneesh Chopra – White House – CTO
All right. If I may, just a couple more, if I go down the list: I would say, if I could go to Kim next, because you testified next, I was very intrigued about the unified portal between the private payer in the state, BlueCross, and Medicaid. One of our meaningful use criteria is about the core certification around billing and administrative transactions. To what extent – you mentioned that you hadn't seen as much uptake. Is there a lesson you could share with this group about how, essentially, if I'm hearing you correctly, the provider has a single portal, if that's the right word, to interact on administrative transactions, both to check eligibility verification theoretically on Medicaid, Alabama Medicaid, and … am I overstating this?

Kim David-Allen – Alabama Medicaid – Director
Yes, it doesn't have any administrative functions.

Aneesh Chopra – White House – CTO
It is what, I'm sorry?

Kim David-Allen – Alabama Medicaid – Director
It's only claims type information. It's not administrative.

Aneesh Chopra – White House – CTO
it's just claims submission?

Kim David-Allen – Alabama Medicaid – Director
Right. So I think the lesson learned there is what additional value can you build into a system that a provider will embrace, and that would be it, administrative side that they could submit claims, check eligibility, things along those lines.

Aneesh Chopra – White House – CTO
Anne, did you want to follow on that?

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Yes. One of my favorite topics are those administrative transactions. And I believe what Alabama is referring to is just passing the payer data to a patient portal or an EHR where you have at least some level of information on build history versus clinical history, and making that available to the provider.

Kim David-Allen – Alabama Medicaid – Director
That is correct, and it's not a patient.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
And that has nothing to do with the administrative transaction.

Aneesh Chopra – White House – CTO
That's on the backend of the….

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
That's on the backend.

Kim David-Allen – Alabama Medicaid – Director
Right.

Aneesh Chopra – White House – CTO
Got it. Which leads to my question to Jessica, if you don't mind. Your bucket three of efforts to promote the adoption of an HIE, if we think of the Kim example that it's Medicaid plus private payers. In a hybrid world like that, do we have clarity around the 90/10? Do we support these sort of collaborative models? And if so, how much marginal contribution can Medicaid offer relative to the private partner in enabling some of those services, if you don't mind, Jessica.

Jessica Kahn – CMS – Project Officer
Sure. It's a good question, and we've actually floated this by OMB because we thought they would be the first people to turn off the spigot. What we're proposing is kind of a new cost allocation formula for us. Typically in Medicaid, we'll say, you know, if Medicaid is 50% of the bennies or the patients will pay 50%. But this is a little different because these funds are specifically about enabling the EHR incentive program, which is not all Medicaid providers, right? It's only the subset of eligible professionals and hospitals.

What we're going to ask states to do is think about, in envisioning sort of five years, not just who is currently an eligible Medicaid provider or a hospital or eligible professional, but where they think that's going to go over the five years, and that's where they are talking about proportional cost allocation. So for example, New York had a data source that, as of 2006, they thought 11% of their providers of Medicaid would be eligible for the e-insure incentive program. They're going to drive that up, so we wouldn't expect them to come in and say Medicaid is only going to pay 11% at the table with the other payers. We would expect them to propose something that's where they're trying to get that higher proportion of eligible professionals and hospitals. But it has to be something that's directly proportional now to the EHR incentive program, and that's their allocated share, instead of just the whole universe of Medicaid patients or the whole universe of Medicaid providers.

Aneesh Chopra – White House – CTO
You think that guidance might come out roughly when?

Jessica Kahn – CMS – Project Officer
We actually presented it at our conference in early February to get states' input, and we've had a series of conference calls with all states because we want this to resonate, and does it make sense, and how do you feel about this? Then what we're doing is putting it as an attachment to a state Medicaid director's letter, which is our policy vehicle, and that's currently going through the draft now because we don't think that's necessarily something that's subject to change in the final rule. This is part of the statute, the 90/10 funding. So we are in the process of writing it, hopefully by the end of this month, but these letters go through significant clearance.

Aneesh Chopra – White House – CTO
For the purposes of this committee, on the meaningful use provisions around administrative transactions where we know Medicaid is a partner in this--

Jessica Kahn – CMS – Project Officer
Right.

Aneesh Chopra – White House – CTO
--there will be clear frameworks around how Medicaid could essentially cost share with private payers at the state level to build up some of these capabilities.

Jessica Kahn – CMS – Project Officer

Absolutely. Yes.

Aneesh Chopra – White House – CTO
I think that's a takeaway for this group, and it would be useful to make sure we're gathering how the standards process the core certification that we proposed might be turbocharged, and what the feedback is. So in this example, Kim, your input to Jessica on how you take this asset you have on the backend of sharing the claims data, and really on the front end, turning on certain transactions that … singular focus to the….

Jessica Kahn – CMS – Project Officer
Right.

Aneesh Chopra – White House – CTO
Yes, Cris Ross?

Cris Ross – MinuteClinic – CIO
Just a clarifying question, so that cost sharing, is that in the context only in a managed Medicaid contract that a state issues with a private payer, or is it more broad than that?

Aneesh Chopra – White House – CTO
I heard broad.

Jessica Kahn – CMS – Project Officer
It's broadly because there are a variety of scenarios that we already have out there, and so we're not starting a blank slate, as you heard from Hunter and Kim. Some states are already pretty far along, so we're trying to draft guidance that can incorporate the various models that are out there and sort of where you are now. How can we cost allocate where you need to get with that gap for enabling Medicaid providers access to meaningful use, which if that infrastructure isn't there, that basically shuts down our program. Yes, we obviously have a real stake in making sure that the funds are used in support of the broader efforts.

Aneesh Chopra – White House – CTO
That's terrific. Ken, if you don't mind, a little bit more about this, the value-add. So if I'm a community physician, and I see a cancer patient, and they request an electronic copy of their record as part of our meaningful use and our standards discussion around the 48 hours, what is it that they get? If I heard you correctly, Ken, you will have a modular service that's open and sharable so that if that clinician had an existing product and wished to expand just those capabilities, you're saying that the NCI could help those clinicians achieve that provision at a very moderate implementation burden. Is that an accurate summary?

Ken Buetow – caBIG & National Cancer Institute – Director
Yes. That's dead on. What the concept here is to have, you know, think big, start small, act now, and have some chunks that people could actually use right away. At one level, it immediately provides utility to the provider in response to this specific request from a consumer, and then, secondarily, it provides utility to the vendors who will need to be in a position to actually meet those needs by having a module that would be implementable using a well specified framework that could be just plugged in, bolted onto existing electronic health infrastructures and because it is this sort of reference implementation, it also facilitates the catch of that end of it, whether going to a personal health record of one of the standard, large-scale vendors like Microsoft, Google, or whatever groups, or facilitating other groups sort of entering into that market.

Aneesh Chopra – White House – CTO
Got it. Again, the providers around this room who wish to avail themselves of that service, it's a sharable asset.

Ken Buetow – caBIG & National Cancer Institute – Director
Yes.

Aneesh Chopra – White House – CTO
And you're saying, by the end of the month, some version of this will be more readily available.

Ken Buetow – caBIG & National Cancer Institute – Director
Yes.

Aneesh Chopra – White House – CTO
Which leads me to my last question about this notion of certification and testing. As you hear some of these examples of implementation activities, whether it be the immunization issue that Hunt referenced or the sort of payer transaction issues that Kim surfaced, or this clinical patient engagement piece that Ken had. If I'm hearing you correctly, NIST is going to try to rein, grab some management support for those activities to make sure that, for example, in Ken's example, that modularity, those services could be more widely adopted? Maybe a word or two about how NIST might join in with some of these federal agencies to help … you're willing to do that or something to that affect, more work to be done.

Kamie Roberts – NIST – IT Lab Grant Program Manager
Yes. Yes, we're planning to work with implementers and as well other federal agencies to help define the test tools that Lisa's team is working on right now. And that's why we're putting them out for public comment, and it's easily available on the Web site, so people can look at it and see how it compares to what they have or what they are doing, and then be able to comment to Lisa, so the changes can be made before the final is published.

Aneesh Chopra – White House – CTO
That's my run of questions. I'm done. I'll cease and desist. Linda, you might want to call on who is next. I think it may be Jamie and then Anne.

Linda Fischetti – VHA – Chief Health Informatics Officer
Jamie, we'll start with you.

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
Thanks. I want to get back to the Medicaid theme a little bit, so I think this is probably primarily for Kim and Jessica, although others also may want to chime in on this. My question really is about the coordination of the different programs, so there are state HIE grants going out to the states that may have Medicaid participation. There are the Medicaid HIT plans that you'd talked about, but then there are also preexisting projects, the MITA projects that are going on in many states, and I'm trying to understand how those fit together, frankly, and then also to the extent, there was some discussion about the use of administrative transactions. Since that, I believe, is the primary focus of the MITA projects, is there a possibility of extending those to use something like claim attachments, for example, as a mechanism for interoperability?

Jessica Kahn – CMS – Project Officer

I'm sure those are great questions, and we get the same questions from states all the time as well. From the most basic, basic level, I can just say that part of our role, we feel like, is to help clarify that for states, our role globally, like the Feds here at the table. What we do, for example, is we hold joint conference calls, and we say your HIT plan for Medicaid is a chapter, at least the HIE part of it, is a chapter in the larger state HIE plan that you're drafting under your ONC cooperative agreement.

Then what we do is we turn around and read each other's plans so that we don't have any HIT plans submitted from states formally yet, but we have read what was submitted to ONC for their HIE cooperative agreement, so we have an understanding of what to expect. And we're trying to marry up the staff, as we both staff up, so that if I'm the region four person looking at all the state Medicaid HIT plans at CMS, on the HHS portal I can go in and look on those states, is what we're trying to conceive. We could also, then they could see for those same states what the HIE cooperative agreement is saying on the ONC side and have some real discussions, and we've had some joint conference calls, actually, with the states to say, you're pushing this in this bucket. Maybe it belongs better in that bucket, or so on and so forth.

Then there's this third bucket, as you mentioned, which is the Medicaid management information system, MMIS bucket, which also can offer 90/10 matching funds for the build at least, but then it has this capacity to do ongoing support at 75% and 50% matching. And that's important because we're not envisioning the HITECH 90% as an ongoing operational cost forever. But MMIS could be. So the overlap here is if there's something they need to with their, what has essentially been a legacy claims engine, and they want to be able to build it out so that it can be partially a clinical repository, or at the very least, it can push the claims out to the HIEs and populate for pharmacy history or whatever, we can pay for that other MMIS money, and we'd rather do it that way because that's more appropriate for two reasons. One is because it's a change to the capacity of the MMIS, and it relates to our Medicaid IT architecture, which is taking this whole system along a maturity model of to be, where do you want it to go in terms of service oriented architecture.

The other reason to do it out of the MMIS money is because we're hoping to normalize a lot of this into the way Medicaid does its business, so that the data that comes in, and it's held in the Medicaid agency for HITECH, can also be looked at for quality oversight. It can be looked at for aligning payments to outcomes and pay for performance, so that same vehicle that brings in the clinical quality measures under meaningful use will bring in the clinical quality measures that were enacted under the CHIPRA program within a month of HITECH. So we're not looking at building these silo architectures for all of these things. That's the other reason that MMIS gives us that latitude to build something out that has broad applicability in the Medicaid program, whereas HITECH is sort of just for HITECH.

We are trying to collaborate all these plans and keep them all together, but I think it's important to think about the Medicaid program also as a decade long. The Medicare incentives are five years. The HIE cooperative agreements are four to five years. Those are all sort of enabling this program that's going to take Medicaid maybe a little bit longer because we have some challenging populations and challenging providers. But we do think, and Hunt and Kim can chime in, both, but we do think that through the guidance that we're putting out, and through multiple opportunities to talk side-by-side with ONC, so that they can hear from both of us at the same time, that we're helping to work this out with the states. The same goes for technical assistance, but that's a whole other question.

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
Thanks.

Linda Fischetti – VHA – Chief Health Informatics Officer

We do have one question on the phone that I want to acknowledge. But, Anne, you're next.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
I want to take a minute to represent the person on this committee who doesn't know everything. Well, instead of apologizing ahead of time for my ignorance, so it's one or the other, but this goes to Dougie Fresh. Doug, regarding the NHIN, this has been puzzling to me for quite some time, and I know there's a lot of emphasis on the NHIN starting up and moving along, and I see it's a key player, but I'm thoroughly confused on its relationship to HIEs, and the case studies that you listed, the provider-to-provider. I've got some people in my state who don't even want to hook up to an HIE, and they wonder why they have to when there's an NHIN on the way. Then I have my state that's building, well, proposing legislation that nobody can communicate on health issues unless they go through the HIE.

The big question is, is there going to be an NHIN for Dummies, some kind of reference guide for, I don't know, maybe like my state might be the only one struggling with this. But where is the NHIN in that? Where is the HIE? And do providers really have to communicate provider-to-provider because that goes to EHR certification because we have a lot of discussions in here about is it door-to-door that you need interoperability, not within the site? And there's this big picture that has been alluding me. I'm just seeing things start to fill in, and NHIN is one of them. If I'm a provider, why don't I just skip everything else and just get what I need from NHIN, because you happen to have an interoperable connectivity capability that the rest of us have suffered without?

Doug Fridsma – Arizona State – Assoc. Prof. Dept. Biomedical Informatics
Let me address that. Let me just, for the record, I prefer Snoop Dougie Dog.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Duly noted.

Doug Fridsma – Arizona State – Assoc. Prof. Dept. Biomedical Informatics
I think the first thing, and I appreciate the question. I think the first thing is that the guidance that we've gotten from the NHIN working group is that interoperability and the exchange of information is likely going to be heterogeneous, so that not everybody will use the same method in which to exchange information. So it's important to recognize that what we're trying to do in broadening the accessibility of NHIN to a broader range of participants is not intended to do an either/or, but really an and. And the current NHIN cooperative group that has fairly strong state representation and was designed really for HIE to HIE kind of communication is still available. It's still there, and it's still, I think, a resource and an important thing for the states to engage in.

I think that we also recognize that there may be some segments of that network in which having somebody sign the trust agreements associated with the NHIN cooperative or trying to put in the software that would be necessary for a small provider to be able to exchange may be difficult. I think the states may be an enabling organization, as the NHIN working group described. Organizations that make it possible for people to meet meaningful use by being able to say, take information from a rural community and say, we'll take your information in a simple and directed fashion, but we will assist you in your communications with CMS. We'll assist you in your communications to meet meaningful use in some of the more complex kinds of exchanges.

In fact, I think the states are really important partners, not only in the current NHIN cooperative because that work will continue, and it's important to support, but also participation in some of these new directions. It's clear that we are not benefiting anyone if we have two separate, but equal systems. We

really need to have the ability to have a heterogeneous network that supports exchange in all of its facets. And I think that's part of what this project is intended to do is to help articulate that.

Aneesh Chopra – White House – CTO
May I just build on Anne's comment? Let me just make sure I get it right. In this body, we heard of a problem. The doctor whose patient was moving, and they wanted a one way push of clinical summary data, the standards that we've all proposed, to be safely and securely transmitted. Now you might pay an HIE for providing that kind of delivery service. Or, if we hear Doug correctly, we may have a simple set of capabilities that the vendor providing support to the first physician could essentially spit out the service, and we're presuming that might be a free … that may not be a very heavy cost transaction. It may or may not be free, but I'm just getting. I want to clarify for Anne, so you have the choice, as the provider, to enable that push, that transaction push that you may do so through the HIE, or you may push through these services.

Now, over time, as we approach 2013, 2015, we're going to have a lot more of the conversation about the nature of search and retrieval where we don't have the same one way direction, and those are the heavy lifting that the HIE, that's why if I hear you correctly, Doug, the and is what was critical in this commentary. Did I get any of that wrong?

Doug Fridsma – Arizona State – Assoc. Prof. Dept. Biomedical Informatics
No, that's correct. I think the important point that you've raised here is that it's not just about 2011. It's about 2013, 2015, 2020, and beyond. We want to make sure that we build that foundation to make that happen. I think, as we move forward, there will be situations in which some of these more complex kinds of exchanges simply are going to have to be supported in other ways. But it's absolutely right. We do not see this as an "or". We see this as an "and", and something in which the network will support kind of heterogeneous ways of making that exchange possible.

Aneesh Chopra – White House – CTO
Last comment, question: This committee is essentially charged with gathering the feedback to say, are we making it as simple and accessible as possible so that every provider, Anne, in your neighborhood, if they're anxious about signing a DURSA, and engaging in a way where there's two-way search and retrieval, and I'm a little uneasy of that move, does this testimony give a lesser burden and, therefore, enable the standards based exchange that we're all calling for? That's the question of this hearing. We've heard this now today for the first time. I think we may take it back to our organizations. Will this meet the concerns of the providers on the ground who are anxious about participating? That was at the heart of your question, Anne. Is that right?

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
It was, and then just my feeling that this is so new and fresh. Getting the information out so people appreciate the longer-term view and not make decisions with the short-term, very short-sided. It looks like it could compromise the sustainability models of HIEs. So what do you have that can put information back into my state? Are they going to have to just start Googling? That goes for all the panelists. You all have very important information. I just find it incredible that we all have to go through a search kind of process to get that data and it's not maybe centralized. And maybe some of the impact we could have is to start categorizing and making things available and linked to these sites, but make it in a more meaningful way in the context that we have been bringing this topic forward. I think that would be a huge take away from this.

W

…each of those who I talk with that are participants in the panels understood, so Snoop Dougie, we really do need to be able to put a place out on the Web site, and Judy and I have talked about this, where the information that came out of this panel is very clear, and the takeaways and the ability to access, for example, NHIN is very clear. So you can go quickly to that, and then begin to disseminate that information. That is one of our … thank you, Anne, for that.

Linda Fischetti – VHA – Chief Health Informatics Officer
With about nine minutes left, we have Wes Rishel and then David Kates. Anybody else who has questions, please put up your cards. Wes?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst
Thank you. Just two quick comments: One, I think it's possible to describe everything that is targeted into NHIN Direct at this early stage has a small piece of the overall picture of what interoperability needs to happen, and almost as a series of concentric circles. It may be that the technology currently described for HIEs may not fit well as the center of the circle, but with only a modest amount of give and take between those technological standards and the ones that the NHIN Direct group comes up with, it should be possible to clearly convey a concentric set of circles, both from the business and the technology point of view, that describe the limits and benefits of Direct, and a continuum leading to the limits and benefits of HIEs.

My main reason that I asked for a comment though was to address something that Kim said early, and I think Jessica and Hunt might be able to somehow help to address this. Kim made a point early in her testimony about having the Medicaid at the table while the standards are developed rather than just being responsible for implementing them. I have a long history of working with both payers and providers on HIPAA claims attachments, and Medicaid provided special benefits there because Medicaid often had state driven documentation requirements associated with the claims payment process.

What we found was that often the hardest part was to get Medicaid to the table in those discussions, not for any reason except that every time things got a little tight, out of state travel funds get to be very hard to obtain. I'm just wondering, is there any way that under any of the programs that Jessica subscribed, there can be some specific allocation towards participating in national standards efforts?

Kim David-Allen – Alabama Medicaid – Director
We have already released planning funds to 35 states and 4 in the hopper for this kind of discussion where they need to be and who is involved, and it's roughly about $50 million that's already out there, and the other states we're nagging them daily. I think it's important to understand that we think that being engaged at the national level, being engaged with your stakeholders at the state level is part of your planning process. It's part of figuring out how this is going to be successful in your state.

There's still the dime that you need to come up with on the dollar, and we've heard from some states that that might itself be a challenge. Then I should say we've also had opportunities to be able to fully fund travel, and states still did not allow it, even though it was 100% fully funded. Having worked for states before, I understand that sometimes it's about perception, not just about actual dollars on the table. Yes, we would think that being able to participate in a meaningful way for your state – I promised I'd strike that word from my vocabulary, sorry – in an important way for your state is an allowable use of the 90/10 funding. Most states did put travel and so forth into their advanced planning document requests. And if you're with a state that hasn't yet submitted one, then that's a whole other question. But, like I said, we have 35 approved, 4 more probably by the end of this week, so that's already the majority of states.

Linda Fischetti – VHA – Chief Health Informatics Officer

Thank you so much. David?

David Kates – Prematics, Inc. – Vice President Product Management
Thanks, Linda. Thanks, panelists. Doug, this may be addressed to you. Ken, you may want to weigh in as well. As the NHIN starts laying out these use cases and developing tools and standards and the like to support facilitating the smooth communication and interoperability of information between care settings and the like, do you envision that there will be services that will be on the backbone of the NHIN that will be necessary or will be appropriate to stand up to support even as we talked about the escalator of meaningful use, as we move from 2011 to 2013 and 2015, some services that you might identify some of those that Ken has established that might either be generated our of the public sector or in the private sector? And what sort of input do you need in order to identify those? And what sort of conditions can you establish in order to create an ecosystem to create those services?

Doug Fridsma – Arizona State – Assoc. Prof. Dept. Biomedical Informatics
Thanks for that. One of the things that's important is that the NHIN, when we think about it, we put a "the" in front of it, but it's really not a thing. We talk about "the Internet" as well, but nobody is going to be able to download that on their USB drive.

The NHIN really is defined as the standards, the services, and the policies to support the exchange of information, so there are three components to what defines the NHIN. And so, one of the things that we're really trying to sort of establish, particularly in this interoperability framework that we've got that NHIN Direct will use is to define the standards, kind of what the packages are that get exchanged, and also those services, making sure that we describe the services that know how to take that information and use it in an effective way.

Then there are also the trust relationships, the DURSA, the policies that would be associated. So an implementation guide would be essentially all three of those wrapped together to serve a particular use case. And if we can establish a way in which services in one use case can be reused to support, say, a second use case, now we start having economies of scale. We have the ability to sort of drive the interoperability because people are using similar services to do similar things. That's sort of what our goal is eventually, but clearly it's not just about the standards that would get exchanged, but it's a description of those services as well.

David Kates – Prematics, Inc. – Vice President Product Management
Yes. Just following up on that, I guess without a central planning function that identifies that there's going to be a single set of services or disparate set of those services, do you envision – I mean, so for example, as we move to 2013 and the standards call for RxNorm, many systems today use NDC or proprietary coding schemes. You could envision that there might be a single service to do that nomenclature translation. How do you either create an environment where you identify that that might be federally funded, or that might be created in a disparate manner in the states. How do you see that playing out?

Doug Fridsma – Arizona State – Assoc. Prof. Dept. Biomedical Informatics
Well, I think the first thing is that I think there should be a single specification of what that service should do. And then I think, beyond that, we need to make sure that we understand what the government should do, what the government shouldn't do, and what the government should kind of incentivize to happen out there in the marketplace.

In fact, if we've got a single – let me give an example. Suppose, and this came from the NHIN working group. Suppose that there was something that was needed around directories, to be able to find a person and be able to identify where that was. If we define what the standard is, what needs to be

contained in that directory, what the services are in terms of the kinds of transactions that you could use with the directory, it's sort of agnostic as to whether that's something that the state should do within their local agencies because maybe they have … version versus the centralized approach. But the things that we need to do is define the services, the standards, and the policies that will sort of enable that to occur.

Linda Fischetti – VHA – Chief Health Informatics Officer
Thank you so much, Doug. Liz, back to you for final comments.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
As we go forward, what we'll be asking from you, Doug, Jessica, Kathleen, Ken, Hunt, and Kim is a real simple thing, and that is an easy guide to understanding what you have, how do I get it, and how do I use it. So we really do want to simplify to that level because, as Anne and all of us are experiencing, the people in this room and the people on the phone call and, frankly, the nation want to use your stuff. We don't know how to, so that's the next request from me and Aneesh and others will be an easy guide to understanding what you have, how do I get it, and how do I use it. I see a shaking of heads, so I know you're going to take on the challenge, right? Terrific.

Aneesh Chopra – White House – CTO
If I may, just before we finalize this, one of the key takeaways from me is, so, Hunt, I was really taken by your ability to synthesize the immunization receipt example. I don't know if that's written in your blueprint for the future of Vermont or, Jessica, if that's in some page 79 of the triplicate form 0.3A that addresses how I qualify for 90/10 match, but being able to surface our standards committee actions or potential for future actions on something as clarifying as I don't know how to accept that into the EHR, that nugget is really impactful and powerful, just as, Ken, your offer to achieve the consumer service by this reference implementation that could help vendors achieve it. I don't know, Jessica, if there's a way, if any of those documents find their way to CMS that you have a sort of open portal where that stuff is dumped and at least we can use search at least within that framework. But a takeaway is that that's the good stuff there, Hunt, and how we find a way to continuously gather those nuggets would be helpful. I'm presuming we're going to find a way through the blog to surface a number of those.

Ken Buetow – caBIG & National Cancer Institute – Director
That's exactly it. Yes. I'm working with Judy to figure out how we can at least get pointers on the blog to issues that are relevant to the implementation work.

Aneesh Chopra – White House – CTO
Yes, because that's how this committee can be more effective if we realize there's a gap, and we can engage on it. To the extent we don't have to create new work, if there's existing work, Kim, if you're submitted the blueprint for Alabama, and it's in Jessica's department buried in a file cabinet, wherever, I don't know how secretive these documents are or how publicly available they can be, but maybe there's a way to do all that.

Jessica Kahn – CMS – Project Officer
We plan to make the approved state Medicaid HIT plans. We're going to post them on the CMS Web site. The others are funding documents and contain some proprietary, we're going to contract with this and that, so we don't post those. But we do plan to post the HIT plans. And, more importantly, we're going to post trends and what states are asking for, so you don't have to go and read 50 of them. You could pull down a one or two-pager that says these are the primary things related to interoperability that states are paying for, what we're paying for, for 90/10. These are the primary things related to technical assistance. These are the primary ones related to….

Aneesh Chopra – White House – CTO
Jessica, just to clarify though, an approved plan will be when? Realistically, what date do you think we're going to have approved plans?

Jessica Kahn – CMS – Project Officer
My sense is most states are waiting for a final rule to submit their approved plan because it has to reflect the program and how they're going to implement it. So we're expecting to start seeing them this summer through the fall.

Aneesh Chopra – White House – CTO
Got it.

Jessica Kahn – CMS – Project Officer
But they don't have a deadline, I should add.

Aneesh Chopra – White House – CTO
Thank you.

Hunt Blair – OVHA – Deputy Director
I know we're running out of time, but I just wanted to say that from a systemic policy point of view, it's important, and Jessica touched on this. The coordination that's going on between CMS and ONC is incredibly valuable, and I think that the other thing to remember is, despite all the hard work of everybody in this room and many others, we're still at the beginning state of all of this. And so I think we're going to see, over the coming year, a lot of synthesis of this stuff. All the Vermont stuff, by the way, is on our state healthcare reform Web site. NASMD, Association of State Medicaid Directors, is doing a great job of distributing that information as well.

Aneesh Chopra – White House – CTO
Very good. All right. Thank you all very much. Great work. Next we've got a whole bunch of providers and their partners to come up. Liz, you have the honor and privilege of leading this one, so maybe you could get this teed up, as they start walking forward.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Today we have the honor of bringing to you four CIOs from very diverse hospital provider settings, along with their vendor partners. And so we looked across America to say, small hospitals, large hospitals, inner city, to talk to us about your experiences with getting ready for meaningful use. You've done a terrific job for us, and we want you to share those experiences. Much like Aneesh said before, bringing us very concrete examples of what you're struggling with, so we can help you, and you can help us better understand how to solve those issues. I think they're almost all here. If you guys will sit with your vendor partners, please.

Aneesh Chopra – White House – CTO
This is the buddy system, the buddy system. You're on the school bus.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Unless there's something you haven't told me about a change in vendor recently. We'll start with David Muntz. David is the CIO at Baylor, and his vendor buddy, as we're calling them, is Jay from Eclipsys. Dave, let's start with you.

David Muntz – Baylor Health Care System – SVP & CIO

I had prepared to read a statement, but at the advice of Liz and Linda, they suggested that I try to go off transcript. First of all, I would like to address Chairman Chopra and members of the implementation workgroup. My name is David Muntz. I'm the senior vice president and chief information officer for Baylor Healthcare System. It's a very large system actually in Liz's backyard. We have 14 hospitals, about 19,000 employees, and about 3,000 physicians who have privileges. We employ or we own a group, which employs about 500 physicians.

I do hope that you'll – you've said that you've read this document, and I do hope that you have done so. I also happen to serve as chair of the Advocacy Leadership Team for CHIME, the College of Healthcare Information Management Executives. They did what I think is a very masterful job of putting together a document that you also have access to, and I would encourage you to read it. It not only offers our concerns, but it offers alternatives on how to do things differently and much more approachably.

What I'm going to do is try to share with you some organized thoughts. Now you've got to remember that random is an order when I say that. But change is really the theme of my comments here today, and change is so difficult, but I do want to quote somebody who I spoke on a panel with, and talking about the differences between installation, which is hard and mostly technical, implementation, which is really hard and mostly organizational transition, which is incredibly hard and fairly human. And then what we've tried to focus on, which is clinical transformation, and I think that's what the goal of the regulations are to do. It's not just to stimulate the plan, but it's to get a new way of delivering care.

Clinical transformation is profound, new personal, and enterprise behavior. And so if I asked any of the panelists on the committee here how they would identify themselves, pick out three top words, I can tell you that it's been my experience when you talk to medical people that one of those top three words is going to be RN, MD, or whatever role they play in healthcare. And so when you're trying to get change done in healthcare, the task is infinitely harder than almost any other profession because the way they do things is how they identify themselves. And so we're coming in now and saying that on a very prescribed fashion, we're going to have to get people to make these profound new changes.

Unless you can get the individual to make those changes, the organization won't make the changes. If they do, it won't be sustained. And so it's that real tradeoff between personal and organizational behavior that's really significant. I used to tell my daughter as a joke. Now just how many psychiatrists does it take to change a lightbulb. The answer is one, but the bulb really has to want to change. So those are the kinds of thoughts that make it really tough for us to do this.

We have actually 15 people that we employ in our group who do nothing but focus on change management. A lot of the tips and tools that they use are in the testimony that has been provided here. One of the things that we focus on that people talk about is workflow, and everybody is talking about that. But the other is thought flow. And that has a really profound impact on the way that we do things.

An example was when we were talking to a physician, and we were talking about CPOE. He was so excited because he finally figured out what would be in it for him, and he talked about the ability to go up to the second floor again and enter orders on the patient when he got a phone call, and he didn't have to locate the chart. The ideas was, oh my, God. T his is such a stunning revelation for us. You can do this from anywhere. You don't have to run back up to the floor where the patient is to enter the order, and so here's an example of what you can do to change workflow, but trying to get a profound, new way to do things with these kinds of opportunities is what I think is the greatest challenge.

Now we've been on our journey since 2004 when the board first said we need to substantially improve quality. We started in earnest in 2006, and we won't be finished until 2013, and so when you think about

that timeline, and you think what we're trying to do with the compression of time and the availability of resources, this is a really huge challenge. One of the things that you also have is access to the survey that CHIME put out, which talks about the reactions that people have and the overwhelming majority in the 80% range really do believe that these changes will be very effective. But the other thing is that that same number is somewhat to very worried about what the implications for the changes are. I would hope that you would give that change management great consideration, as you put forth your plans. Thank you.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Thank you. Jay?

Jay Colfer – Eclipsys – SVP North American Sales
I thought we were just going….

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
If you're not prepared, we won't put you on that spot, but this is your opportunity to talk a little bit about what Dave talked about and then, from Eclipsys' perspective, what are your customers doing. We can come back to you if you want a moment to put that together and think about it.

Jay Colfer – Eclipsys – SVP North American Sales
Sure.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
All right. We'll do that. We'll move to Charles Christian, or Chuck, as I know him. Do you want to talk a little bit about your hospital and what you're doing around meaningful use?

Chuck Christian – Good Samaritan Hospital – CIO
Great. Thanks very much. I appreciate the opportunity to represent Good Samaritan Hospital. I am Chuck Christian, the CIO. I just want to tell you a little bit about Good Sam. We're a rural healthcare facility. We are the only facility in the county. We service quite a diverse area. We have significantly more … acres under cultivation than we have individuals in the county. I tell everybody, we used to grow corn, but now we grow fuel because we do a lot of ethanal production.

As David said, we've prepared remarks for you and provided those to you, and I had prepared to read mine as well, but I'm going to kind of go off the cuff, and I'm glad you've got the clock up there because I have a tendency to be verbose. Just ask Liz and David. And I notice Linda was also waving at folks, so she may have to wave at me as well.

But what I want to do is share with you the journey we've done at Good Samaritan Hospital. We are not like other small community facilities. We've been very progressive, and we identified information and technology a long time ago as some way to have a transformational change in our clinical environment. I'm an x-ray tech by education. I spent 14.5 years in a variety of management roles in radiology, and I'm married to a critical care nurse, and so I am a clinician at heart, and I wear that as a red batch of courage because I think it's very important.

We did all the easy stuff years ago from implementing patient management, general ledger, those types of things, being able to produce and be able to remember. I started in healthcare long before anybody thought of a DRG, and so it was not something that we took too lightly about automating clinical stuff. That is the hard stuff.

We started actually our implementation process back in the late '90s. We reviewed everything, what we were doing. We looked at quality. We tried to decide what was going to be most important for our patients because, and then since, the people that we take are our family and our friends. And so we want to make sure we do a really, really good job. And so we tried to view those things that were very important, so we started on the clinical side looking at clinical documentation. We had a prescribed roadmap over a course of many, many years, and it took us about ten years to get to where we are today.

We're at the precipice of the next thing we need to install is physician order entry. It is very expensive. It's very difficult. Most of our physicians are in private practice in the community. It's very different trying to install CPOE in that environment versus an academic medical center where it can be prescribed because, as David mentioned, you have to determine what's in it for them. What is going to impact the physicians, how is it going to change the way they practice medicine? And so we have to make sure that we're clear with physicians and work with them in a cooperative and collegial manner.

The other thing that we've took a real hard, long look at, and we've been doing this for quite a few years is quality metrics. We have a really great team in our quality staff, and when I first got the meaningful use requirements, I walked it up to Elaine's office, and she and I sat down. We went through that, and she said, well, we capture most of these. And she said, the others that we need to capture won't really be a big deal. And I said, okay, Elaine. Which system do you hit a button and produce this documentation? She said, oh no. This is done by a retrospective review of the clinical record. It is manual, and we do statistical sampling that is approved by our quality folks.

For us having to go back now to look at what we need to do in order to produce these electronically, there is a significant amount, and I'm going to use another one of David's words, change that we're going to have to implement. We're very accustomed to change. Change is the only constant we have at Good Sam because we're constantly looking for other ways of doing things better.

We've recently stepped off our precipice of our Baldridge journey, and we are embracing change in a much higher level than we ever had before. I used to think we did a really great job until I started looking at the Baldridge criteria, and I went, oh my, God, do we have a long way to go. And I think that's a good thing, and I think most of the healthcare institutions that I've worked with, that I know, that I interact with on a daily basis are also looking to embrace that change, what's good for our patients. This is not easy stuff. This is hard stuff.

I have a staff of 25, much smaller than David's, but I have one institution. He has many more to do, as Liz does, and Judy as well. I appreciate everyone's time and effort with this committee. I think the things we have in front of us are exactly what we need to do. I'm just concerned about how we're going to compress this and get some organizations that I know that have not taken the opportunity and time to get to where we are today. Thank you very much.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Thanks, Chuck. Michelle from McKesson?

Michelle Freed – McKesson Corporation – VP
My name is Michelle Freed. I'm from McKesson Corporation, and I have the responsibility in a program office to coordinate across the company the efforts associated with the HITECH Act in implementing and achieving meaningful use for our customers. I'll start off by saying just in terms of the size of McKesson and the depth and breadth of products that we have.

We actually have four EHRs—they're outlined in my testimony—two on the hospital side, two on the eligible provider side. And we cover approximately 450 hospitals across the United States in full clinical implementation of the EHRs. And as far as the physicians go, we cover approximately 120,000 physicians across the United States using our products. We also have the Relay Health business, which is securely processing the financial and clinical transactions across diverse connectivity solutions, anything from e-prescribing, to online consultation, to the patient record.

With that as a backdrop, one of the key questions that came from the committee associated with roadmaps and how are you getting your customers from where they are today into a roadmap that is going to get to the software and the certified software for meaningful use for stage one. Actually, we are in pretty good shape in terms of many of our customers. When you look across stage one, stage two, stage three of meaningful use, we can accomplish probably 70% to 80% of the functionality that's indicated in those particular guidelines. To that extent, that's very positive.

What I would indicate to you though is that it's going to require some fine-tuning. Obviously without having the final rules available for stage one, there's constant fine tuning and updates that will need to be delivered to the customer base over time, and that is true of all the vendors. But it would certainly help if we would have those a little bit earlier so that we can get that roadmap identified and delivered to our customers very quickly.

In terms of the challenge, the most significant challenge that I've alluded to here is really the timing of the deliverables. It's not only a situation for stage one, but it's also, on an ongoing basis, of really understanding what the requirements will be over the various stages and getting the clarity in the proposed rules and in the final rules, so that the vendors can react in an appropriate timeframe and be able to deliver to customers on time. The potential risk, as Chuck has mentioned, and David as well, is that in hurrying through this without having enough time, there is a huge potential risk of going too fast, of having hospitals make decisions far too quickly, and to make the wrong decision. And in that change management, as you all know, the change management component of it is our most significant, and major concern in the industry, especially in servicing hospitals that have anywhere from the range of 200 to 400 beds, as opposed to large staff in an academic community that will be able to support and provide a different process associated with such things as CPOE.

Our focus today and the tools that we're using, our focus is really to our customers. The majority of our efforts that we have underway currently are really to how the customers are utilizing our current products, and we're heavily focused on fostering the execution to use the proven technology so that they can achieve meaningful use in the timeframes to make healthcare safer and to get better connected. A number of tools that we have on our Web site that I have referenced in my testimony will certainly help customers, as well as non-McKesson customers, to really take a look at their processes across the board and really understand what it is going to take to make those most significant changes.

I've included in the packet a brochure that we have published, we've given to our customers and non-customers as well, that will provide a guideline to anything from governance, which is very important in getting the support of the executive team, and having that support resound throughout the hospital for that change, all the way through the details associated with making the change, the committees that are needing to be established in order to make key decisions and to move forward. We've also spent a great deal of time in assigning what we're calling stimulus liaisons to our customers, working through assessments, detailed assessments of how they're processing information, collecting information, getting their measurements in place, finding those gaps, and trying to get those gaps certainly resolved far ahead of any of the time requirement for application. In addition, we have ongoing Web seminars and education

that we're offering to our customers in providing that level of support, so that they can achieve meaningful use.

We highly value innovation. We've been a leader in delivering leading edge technologies. However, we certainly recognize a balance, in this particular function, of execution versus innovation. And, today, we're really focused mainly in the execution of the products, execution of the processes that are necessary for meaningful use, and getting our customers to meaningful use. Thank you.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Thank you, Michelle. Michael Sauk, Mike, do you want to talk to us about your organization?

Michael Sauk – University of Wisconsin – VP & CIO
First, I want to say how honored I am to have been invited. It's nice to see the people that are creating our challenges for the next decade. I'm Mike Sauk. I'm the CIO and VP for the University of Wisconsin Hospitals and Clinics in Madison. I had a choice in coming in here down the hallway of either going through the National Funeral Directors Meeting, or HIT, and I decided you had more future, so I walked in this room.

We've had an opportunity over the last 39 months to install every module that Epic has created to date, with the exception of historic module because we don't deliver babies. But other than that, everything that Epic currently sells, we've installed, and we've had the opportunity to be the alpha site for their mobile meds product, the anesthesia product, and now the transplant product.

When I first came 39 months ago to UW, we were in the process of trying to get a legacy pharmacy system interfaced to a foreign EMR, and I knew immediately, based on my more than 25 years in healthcare, and knowing the roads that are strewn with the bodies of CIOs that have tried that, that we needed to move on. And, luckily, our medical foundation, which is 1,200 physicians, had already begun the journey to install Epic. So it made a lot of sense, since we had the same patients, that we would share the same database. So we began the implementation in January of 2007, and I have given you, in effect, publicly a scorecard of how we're doing.

We've sort of opened the kimona to show you what's going on within UW. And with the exception of 6 of the 23, the current 23 that I was working from, we are in compliance and believe that we could pass. I'm not going to put that challenge out there. We hope that we can pass when the certification comes out as to how that's going to be accomplished.

I want to comment on what Chuck had said that certainly in an academic medical center, you can see our numbers for CPOE utilization is in the high 80's or mid 80's. It's a lot easier with residents because they can be told what to do. However, I can tell you that generally the CPOE has been accepted well by our physicians. I think that it was accepted well because we were able to spend an enormous amount of time with a team ranging between 6 and 10 staff who built more than 600 order sets. And, certainly, order sets make it a lot easier, and the acceptance is easier for physician order entry to have those built.

Then we continue to have a team that continues to enhance those. They were built using initially Zinx as sort of an evidence-based platform, and we've continued to build those with the expertise of our own division chiefs, and we've also carried that forward into what Epic says is the most number of developed cancer protocols for their beacon product that Epic has at any site. So there's an enormous amount of investment that's been made. I am clearly to be on my side of the river, and glad that I'm not starting from scratch because you can see, I think, what most people would term a very aggressive schedule of

39 months. But to start today and think that you're going to get meaningful use funds in the near future is probably wishing for a lot because it is not something you do overnight.

Our success, I can pin to really operational support. Our CEO, when the project started, told the organization that the implementation of our EHR was the number one priority of the hospital. It remained that for over 3.5 years. It soaked up an enormous amount of capital. Other projects had to take a lower priority. People are now able to come to the trough this year and finally get things other than an EMR in their capital budgets, but it was really a dedication on the part of the management team.

When we went live on our CPOE and ClinDoc implementations, our CNO and CMO were spending 16 hours to 18 hours per day for two weeks in our command center. And it sent a really effective message to the management team that this was important to the organization. In addition, we had an excellent informatics group, both nursing and medical informatics, and enormously helpful in putting together workflow analysis and at the elbow support, which helped enormously.

The things that we're going to be struggling with, and I see my time has expired, but I don't have to say much because it's on everyone's minds, and that is really the ability to do the required quality reporting. It's not easy to report to an organization that's not ready yet. So this is all to be defined, and a lot of the data that's being requested isn't in any EHR right now, so that, for us, will probably be the biggest challenge if that's a hoop that we have to jump through before release of meaningful use funds. Thank you.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Great. Thank you. Sumit from Epic, please.

Sumit Rana – Epic Systems – Software Developer
Good morning, and thank you for the opportunity for me to speak here. My name is Sumit Rana, and I have a formal background in computer science, and I joined Epic over ten years ago as a software developer.

There's a little joke actually. Mike mentioned to me earlier today that he had never seen me in a suit, and actually assumed this was rented. So I would like the record to reflect this is in fact my own suit.

Today I am responsible for the ambulatory electronic health record of Epic, and I also oversee several specialty software applications.

We're talking here today about meaningful use and, first of all, I would like each of you to have my packet with you, so you can follow along. While the term "meaningful use" is new, we think it's very achievable and, in fact, many of our customers have been doing meaningful use. They have been doing CPOE. They have been giving patients access to the record through a portal, doing quality management, and other things for some time now, and I think their results actually demonstrate that it is very achievable with reasonable planning and execution.

The first thing you asked us to cover was our product readiness, and Epic's software is certified on 2011 CCHIT criteria. And, to the best of our knowledge, we think we're well positioned for the stage one of meaningful use. I have summarized in my written response in the next few pages how we meet each of the objectives. I'm assuming you have read these. What I would like to do, however, is go through some specific key areas where we thought we had some recommendations for you as well.

The first one is CPOE, the big topic. I would like to first of all offer an alternate, respectfully offer an alternate view. We do think, in the grand scheme of things, CPOE is doable. Our customers have done it in a fairly accelerated timeframe. Again, keep in mind, we have customers that represent fairly large medical centers, but we've had folks go up in as little as two weeks in the scenario of an organization extending CPOE out to their affiliate physicians all the way to a year to two years for the largest centers.

In general, it's been very successful. Our inpatient EHR customers have achieved 80% to 85% CPOE very, very quickly, typically within 2 to 3 weeks of go live, and similarly on the ambulatory EHR side, they get to 90%-plus CPEO, again very, very quickly, within 2 to 3 weeks of go live. On the quality measures front, we have built in support for joint commission, core measures and PQRI. We do both claims based and registry based.

As we've been carefully looking at the quality measures, we think about half of them are fairly straightforward. The other half, we will be submitting a fairly detailed commentary, as we look for more clarification on those.

You had asked about controlled medical vocabularies. We support the use of SNOMED, LOINC, RxNorm, ICD-9, and I would actually mention that we have had many customers use these live for years now.

On the e-prescribing front, again, we think this has very high doability. Our users have been very effective doing e-prescribing, and our collective users across our user base actually lead in many different areas, as per the January 2010 Surescripts report card.

On the area of clinical exchange, we have care everywhere that provides a direct exchange interoperability solution. Someone was asking me earlier this morning how successful that is, and we actually have 14 organizations across 6 states already doing this. Roughly 26,000 patient records have been exchanged, and the fastest site implementation was done in about 6 weeks, so this can be done fairly quickly.

The last thing I wanted to comment on was reporting to public health. I think the objective is fair. What we do recommend is that there is a single federal standard that's formed so that work can be avoided at the local level, so folks aren't trying to integrate with the local agencies.

You also asked about the tools we're providing. I have three examples. The first one is on page seven. This is an example from our meaningful use workbook, and what this does is, for each objective, it mentions the measure. But, more importantly, the recommendation and the training, reporting, and change management impact. This is important for organizations to understand.

On page eight, I have an example of our meaningful use guide that goes into more detail. For each measure, it mentions the workflow, the implementation considerations, as well as integration considerations.

Finally, on page nine, I have an example of a meaningful use readiness assessment we're creating, and we'll be sharing this with our customers on a regular basis, and it will let them see where they stand on each of the different areas, and these have been submitted to public records.

Finally, I would like to take just a quick moment to emphasize training. We strongly recommend our customers to not give out passwords unless physicians have been trained, and also ask them to take proficiency tests. I think that's very important for successful adoption. To summarize, we do not see any

doability product or safe adoption barriers for meaningful use stage one. Going forward, we do recommend that stage two and stage three specifications be expedited, end of 2010 for stage two, and end of 2012 for stage three. Thank you for your time, and thank you for your consideration. Thanks.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Thank you. Mitzi?

Mitzi Candenas – Truman Medical Center – VP & CIO
Well, thanks for inviting me here today to talk about the things we're doing at Truman Medical Centers. I'm Mitzi Cardenas, and I'm the vice president and CIO. Truman is located in Kansas City, Missouri, and we have two hospitals.

I'm not going to talk to you today about how hard it is to get this done. You hear that quite frequently. We're going to talk about how we're working hard to meet the requirements and why it's really important to Truman Medical Centers to do that.

It's important that I begin by stating that although we are working diligently to meet the currently proposed requirements, the charge from our leadership to complete the implementation of our EHR actually came before any of the legislation or any of these requirements were published, so we've been on this journey for a bit of time. And the direction came from our CEO and our board, and they've been clear with us throughout that this is the right thing to do for our patients. So it's not about the money. It's really about the right thing to do for our patients. We have to have the right data in an electronic format to be able to manage our very complex patient population within our hospitals and clinics, and we also need that data so that we can share it with the FQHCs in our community who are also part of the larger safety net, and the many complex patients that cross between our organizations.

With that said, I'll tell you again that Truman is a safety net organization and, as you might assume, safety net organizations are particularly challenged by having access to the kind of capital that we need. We have a large, uncompensated care burden. Many of our patients are Medicaid eligible, and we also have many that are uninsured, and many that are, because of economic and social barriers, have considerable chronic conditions that result from those.

Our mission is really two-fold. We're working aggressively to safely and effectively implement the rest of our electronic health record, but also to meet the requirements so that we can get the funding for Medicare and Medicaid. I'm going to highlight some areas that are important to Truman to both make us successful with building our electronic health record that supports our clinicians and our patients, and also helps us meet the requirements, so kind of focusing on two things: how we're getting adoption from our clinicians, and also how we're attempting to get the right data into the electronic health record so that we can report on the quality and functionality measures.

The challenges we're facing are not unique to Truman in light of the difficulties across the industry in making this happen. It's clear that the functional measures require progressive levels of adoption and process change to be able to meet the requirements. And if the clinicians are slow to adopt, we don't get the data captured in the record that we can use to complete our reporting requirements. I think it's important to remind the workgroup that getting and sustaining adoption takes good planning, continuing to add value to care processes, and continual training to improve productivity and insure the most efficient use of the tools.

Adoption has been challenging for our organization over the last few years. We've had a number of starts and stops, primarily due to funding challenges that have oftentimes created a need to redirect our

resources to more immediate needs. The most important thing we did initially, we've kind of talked a little bit about this today, was when we started looking at adoption, we aligned our operational, clinical, and quality leadership, gained their commitment and agreement to be accountable for the success of our program. We also engaged in building and supporting our implementation plan.

We agreed with our organization to communicate early and often, and we've worked with our PR and marketing department to create consistent messaging that goes out to everyone, including physicians, on a weekly basis. We want to insure that the focus on this initiative was clear to everyone, so we called our program Q6, which is quality to the sixth power, in recognition of the six Institute of Medicine aims. Our focus has always been about quality, and we continue to drive our project teams back to quality outcomes as a first and foremost goal. And although the patient remains the center of our decisions, we had to design a system to support the clinicians' workflow.

We didn't want to make it more challenging for them to adopt, so we're using some Cerner technology to create a kind of entry view for physicians. We've implemented it in our ambulatory areas, and it's been very successful. It helps to drive their workflow and helps them to record the data that they need and what we need for other things. Training was identified as a significant risk, and clinicians and, interestingly, our board as well, expressed to concern about our ability to be successful without a solid training program. We haven't had the opportunity to focus enough resources in the past, so we had less than adequate results.

Working with our nursing leadership, we crafted a plan and made substantial investments in permanent space, equipment, and additional training staff. We've used tools from our vendor to identify our training requirements, and we've used some homegrown, as well as Cerner customized CVTs. We had to get the right data ino the system, so we've implemented tools that facilitate workflow for our clinicians while providing evidence-based decision support that ultimately drives care plans, as clinicians are documenting. One output of these tools are daily reports that will enable concurrent review to make adjustments to care plans using the data the clinicians have recorded.

And we also participated in a joint working session with Cerner and the members of our leadership team when we first started down this effort, and the first requirements were defined, to make sure that we were focused on the right things. And we're using some reports that Cerner is developing and that we're working with them to develop to give us an executive level view of how we're meeting those requirements, do we have the right data and the system, and are we looking towards success. Although we're very concerned about the speed of the implementation, required for those of us who aren't quite there yet, and also about the all or nothing approach to receiving the funding, we're working hard to get to where we need to be in a way that's safe and effective for our patients and our clinicians. I thank you for your time.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics

Thank you. We will go to Mike. And then, Jay, if you want, we'll come back to you, so Mike Valentine from Cerner.

Mike Valentine – Cerner – EVP & COO

Great. Thank you, Liz. I actually had a leave behind that hopefully everyone has a copy of, and I sent an electronic version for those that are not in the room. My name is Mike Valentine. I'm the chief operating officer at Cerner Corporation in Kansas City. I have responsibility for our operations worldwide, including 25 companies.

On behalf of Cerner, I'd like to thank the HIT Standards Committee Implementation Workgroup for the opportunity to provide testimony about our experiences with accelerating adoption and implementation of electronic health record systems. In the 30 years since our inception, Cerner has enjoyed numerous opportunities to partner with healthcare providers, such as Truman Medical Center, on their respective journeys to implement and use technology to provide safer, more efficient, and higher quality care.

Every client's journey is different and, as a result, there is a spectrum of technology adoption across our client base. In short, for Cerner and for our clients, this means there's not a one size fits all approach to meaningful use. Despite this, Cerner is committed to insuring all clients who wish to pursue it can achieve meaningful use using our solutions and services. For many of our clients, reviewing the stage one meaningful use criteria has been a validating experience because the criteria aligned with many of the capabilities they've either already implemented or will soon be implementing. The high level of performance required to meet meaningful use is an important waypoint in our collective journey, and Cerner believes that achieving meaningful use in 2011 is feasible for many of our clients.

To give you a feel for our assessment of the state of our client base, we have created a leave behind that shows some basic analytics and how these analytics changed over the course of 2009. These analytics were focused on our premier client base, which essentially includes our largest, 218 U.S. based clients, representing about 2,128 facilities or about a third of the hospitals in the U.S. Based on our own estimates, we think that about 30% of our premier client base is well positioned to demonstrate meaningful use in 2011, and another 30% to 40% are on the right path to get there quickly. To insure this happens within the timeframes dictated by the stimulus, both Cerner and our clients need to perform appropriate planning activities.

To assist in the planning process, Cerner offers various engagements with a team of associates whose primary focus is understanding the stimulus law and meaningful use regulations and translating that into actionable information for our clients. In the last 12 months, over 60% of our U.S. clients have engaged our experts in stimulus specific sessions ranging from virtual meetings in teleconferences to multi-week onsite planning and strategy development engagements. In an effort to continually and aggressively educate our clients, we will be conducting a free meaningful use summit in May at our world headquarters campus, where we expect to engage over 100 clients in detailed planning efforts unique to their individual situations.

Cerner has begun to work with CCHIT's preliminary ARRA certification program. In mid January, we received preliminary ARRA certification on several solutions used to accomplish 21 of 24 hospital requirements and 23 of 27 physician requirements. Our client upgrade plans show that nearly 60% of our premier client base will have adopted what will be our certified code in time to accomplish the 90-day demonstration period. Additionally, our data shows that within those same clients, over one half of them have secured 75% or more of the necessary resources to achieve meaningful use.

One way Cerner is working with our clients to make this process faster and have better outcomes is through the use of Cerner's implementation methodology, Method-M. This provides a complete set of tools and best practice recommendations for clients on how to best implement Cerner Millenium. Together with services offered through our solution upgrade and experience centers, Cerner is able to offer speed to value by drawing on more than 30 years of experience of streamlined decisions and provide best practices for building, testing, implementation, and use of our healthcare solutions.

As an example of how these processes can be used to accelerate implementations, Cerner was able to help Mercy Chicago move from a HIMSS stage 2 to a stage 6 in about 13 months, and two clients in Ohio, Fisher-Titus and Magruder, will go from the ground up to a completely paperless HIMSS stage 6 or

7 hospital in ten months. Additionally, Cerner's average duration for a major upgrade in Q4 of 2004 was 68 days. In those 3 months, we upgraded nearly 20 clients.

Once clients are using the correct version of software appropriately, meaningful use rules require them to demonstrate the use through the reporting functional and clinical measures with data sourced from the certified EHR systems. Many of our clients, including Mitzi, have expressed some anxiety over the ability to produce requisite reports for meaningful use. So Cerner decided to build the reports for functional measures directly into our solutions to alleviate that burden. We anticipate those reports being completed prior to certification and well before the clients have a need to demonstrate meaningful use themselves in 2011.

To Cerner, meaningful use is not about using the technology. It's about achieving the benefits and clinical outcomes that technology enables. We cannot afford to lose the focus on the meaningful part of meaningful use and allow these initiatives to just become technology projects that don't deliver the return on investment. As currently defined, and if widely adopted, the meaningful use criteria represent a great step forward and an enormous opportunity to begin to reform our healthcare system by lowering the cost of healthcare while, at the same, increasing quality.

We believe the majority of our clients are in alignment with this strategy to support this very important initiative. The analytics we've provided start to paint the picture that as the percentage of our clients with plans defined and resources secure has nearly doubled going from 38% to 69% over the course of the last nine months in 2009. Our base is clearly mobilizing to achieve meaningful use.

Again, I want to thank the committee for the opportunity to provide comments. We believe the recommended standards set forth by the committees will accelerate the adoption of healthcare technology, which will ultimately lead to a safer and more affordable healthcare system.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Thanks, Mike.

Mike Valentine – Cerner – EVP & COO
Thank you.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
That was great. We'll go back to Jay.

Jay Colfer – Eclipsys – SVP North American Sales
Thank you. My name is Jay Colfer, and I'm the senior vice president of North American clients with Eclipsys Corporation. As a number of the panelists have mentioned, change can be difficult and can be hard, but we, at Eclipsys believe that those things that are hard and difficult, with the right toolsets, can be done and adopted in a manner, which are easy. And that does not mean that it takes time, but it is something that is done with a perspective of the client's perspective in terms of how the software has been developed. To that point, as we've developed our tools, we've taken on, over the years, the hardest task first, that being CPOE and physician adoption. And, over the last number of years, five to six, I believe, we've been a recognized company that has provided adoption for physicians.

Additionally, from a client perspective and, Liz, you asked the question, what is Eclipsys doing for our clients. We are very focused on outcomes, so adoption and outcomes are a primary focus for us from that standpoint. But there are two additional things that I'd like to read from our prepared comments, one that talks about how our organization is focused on speed to value methodology to help our clients install

their products sooner and faster, and then the second in the area of openness and what we're doing as a leader in our industry by opening up our platform.

The first would be in speed to value methodology. Eclipsys helps our clients achieve strategic goals for clinical technology initiatives in shorter timeframes. We start with a 60% preconfigured solution that includes a framework of CPOE adoption, includes pharmacy, ED, advanced documentation, and orders reconciliation functionality. Outcomes toolkits and quality reports are also built in. Then we work with our clients to configure the other 40% around specific workflows and preferences. This enables organizations to roll out a system that reflects industry standards and supports unique clinician practice patterns, promoting deep and rapid adoption. As we take that part of it forward, we see the speed of getting clients' projects completed and adopted throughout the organization faster, and it leads to the results that I mentioned earlier.

Lastly, I'd like to talk about openness. Sunrise Enterprise 5.5 is a release that is being released this month with Eclipsys into our clients. It's the combination of our products designed to help clients run their institutions more efficiently and yield greater patient outcomes. It is also our new and open platform, and this is very important to understand because, beginning with this release of Sunrise Enterprise 5.5, we are providing a technology foundation that will enable healthcare to innovate beyond the feature function paradigm.

Eclipsys' clients have long had the differentiating ability in healthcare to build applications on Eclipsys' solution platforms since 2003. And, since that time, they have created approximately 2,000 medical logic modules and object plus applications that work with Eclipsys software. Now Eclipsys is offering software development kits that enable both clients and third parties to natively write applications to its platform. This move away from proprietary, closed systems, which is too common in healthcare, will support Eclipsys' healthcare organization clients to embrace and extend current technology investments, eliminate the need for costly interfaces to dramatically lower the costs of technology ownership, and remove the technology innovation constraints that are caused by waiting for a single vendor's development timeline.

In summary, what we're doing is opening our platform to eliminate some of the overhead and costs to make it easier for our clients to work with our products, as well as others. Thank you very much for this time.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Thank you. Now I can't imagine that Aneesh doesn't have any questions, so we'll go ahead and let Aneesh have the floor.

Aneesh Chopra – White House – CTO
This is a group, but it's so exciting to hear this testimony. Maybe I'll start on the bookends with some questions, but before I go there, I'm going to connect a couple of dots on the written testimony, what you said publicly, and make sure I'm hearing you correctly. The most recent thing you said, the iPhone app store for Eclipsys, if I'm overly simplifying, in theory, in David's testimony where he referred to the CHIME documents, there was some confusion about what does patient gets a copy of their record mean, which is one of our criteria. David, I'm overly simplifying your language.

We heard earlier that the Cancer Institute has developed a set of services that would address, at least in their minds, from the stakeholders involved in cancer care, what would you need to provide for consumer engagement. If I'm just connecting the dots in my head, that publicly available service could then become commercialized through your open platforms to at least offer your customers an example of how to

achieve patient engagement using just the cancer community as an example or a model. That's the current worldview. Is that how that – could that scenario work, Jay?

Jay Colfer – Eclipsys – SVP North American Sales
Yes, that's exactly correct.

Aneesh Chopra – White House – CTO
Excellent. In a sense, you've created an innovation cycle where there can be more shared collaborative capabilities for the benefit of achieving this compressed timeline that we're moving the industry towards, which then leads me to the question, Mike, on your end, your May summit for clients on meaningful use. This hearing and our standards committee work is essentially interesting. It's trying to understand that connection point. You have clients who are looking to achieve meaningful use and to adhere to the standards this body has put forward.

You have come up with a method to explain to your customer base how you're going to get them there. But there are things that could be done that this body could promote, especially as you move forward into 2013, that would make your task easier in achieving the goals for your clients. In my mind, as I think about your May summit, there may be a set of questions, ideas, thoughts, or concerns that you're taking as a constraint. This is the world as it is, and we're preparing for it. But this committee is hearing your feedback about how might the world be that would help dramatically improve your clients' ability to achieve meaningful use and adopt the standards that we're describing.

In a sense, that's a great framework for thinking about how we can be productive in this conversation, especially as we look to the questions you all raised about what does 2013 look like and so forth, so I want to make sure I get that right, Mike. Is one of the deliverables coming out of the summit, or could it be feedback to this body on how we move forward to hear the concerns your clients have raised, and … the constraints that you have as an organization to meet those needs? Will that be part of the dialog on that May summit? And, if so, how might we better capture that learning from the committee's work?

Mike Valentine – Cerner – EVP & COO
Yes. I think that's a great question. I would say that there are probably a couple threads in the charter of the summit. The first is literally getting to the feature functionality requirements to meet meaningful use, and that actually is probably the easiest. It's straightforward. We know what they are. We see them coming. We have, like everyone else, have our engineers diligently working to make sure that we can check 100% of the boxes when the certification body is identified, and we can go get final certification.

And we want to work through with every one of our clients that roadmap, and that work has been done. Really, the byproduct of that was this. We started at the beginning of the year when there wasn't a definition and said, we think our definition is around HIMSS level five, HIMSS analytics level five. You picked something that was actually relatively close to that with some asterisks, and that's what this reflects here is our movement in our base towards that, so that's job number one.

Job number two is probably tied to your question, which is, the most granular work that we have to do with our clients is actually getting towards generating the necessary reports, both quality reports, but also the functional reports to be able to check the box to say, yes, I am a meaningful user of a certified meaningful use system, which means that the sooner that we get those parameters, and the sooner we can actually build the instrumentation within our software to go create the correct numerator, and the correct denominator, which is what our clients really are demanding from us. And I think that ties to what you were saying, which is, what can you help? What feedback do you need?

I think most of the elongated conversations that we have on this topic are really around how are you, Cerner, going to put me in a position where I can use a certified system, and I have some level of guarantee that I'm going to be, when I use that system according to your specifications, I'm going to in fact meet meaningful use. What we need in order to get to that point is to have the correct calculations around numerator and denominator, and be able to calculate those in an automated fashion from the system.

Then the final portion, which I think almost everyone has touched on, is really adoption, and how do we go fuel adoption because we are going to be accelerating the deployment of the systems. Almost everyone is either staying the course or accelerating their course, and so a big portion of what we'll spend time on is what do we do to go accelerate adoption? What do we go to do enable adoption?

A couple of things that we're looking at, Mitzi mentioned one, which is creating summary views for the system, and putting most of the high order clinical transactions two clicks away from the user. So we're creating summary views within our solutions to simplify navigation, simplify usability of the system, and also put the high demand transactions two clicks away from the user. Then we're studying the usage pattern of all of our clients and giving them that feedback, so they can see where we have users gone awry because of whatever reason. They're not utilizing the system right, down to a click, measuring the clicks at a user level, provide that information back to our clients so that they can go attack the viruses as they come up.

Aneesh Chopra – White House – CTO
Sumit, you've got a reaction?

Sumit Rana – Epic Systems – Software Developer
Yes. I'd just like to add to that that I think when it comes down to it, these are, by the way, full versions of the two guides I mentioned, and you can see there's a lot of detail in here. I think that's what it comes down to, the attention to detail and working through the specifics. Starting last April actually when we had our physicians' advisory council….

Aneesh Chopra – White House – CTO
Are you submitting those two documents?

Sumit Rana – Epic Systems – Software Developer
No, these are just for looking. The examples have been submitted.

Aneesh Chopra – White House – CTO
You don't want to share that with your brothers and sisters around the country?

Sumit Rana – Epic Systems – Software Developer
Representative examples have been shared. But anyway, what I was trying to say was that we've been going through a similar process, starting last April. And at our users' group in September, again, we did multiple sessions. We've been doing monthly Web casts. I think you mentioned the same thing. We go through; we take measures, and we actually go through the details of what this means, what this means from the standpoint of how you are using the system. What this means from the standpoint of the physician….

I would like to tie it back to the proficiency aspect as well because it is important that these measures don't end up burdening the physicians. I think there have been some concerns raised about physician adoption, and I think that is something that needs to be very thoughtfully thought through. Part of it is on

the software vendors to make sure that we make that as simple and nimble as possible. The other part is obviously on the definition of those measures themselves to make sure that they are clear and well defined.

Aneesh Chopra – White House – CTO
My next question is actually for Jamie, my man. There was a great deal of conversation about quality measures, quality reporting from the tactical, i.e. how do we get to the denominator, practical questions to, I guess, some more strategic ones about how we're going to do our work in terms of defining some of those standards. A, it would be great if you could comment a bit to the group about where we are and what we're thinking about some of that, but I'd be curious if you have a set of questions that has come up to you relating to those inputs around how to achieve the quality component of the requirements. I don't want to put you on the spot, but I'm just curious if you could think about how we're dealing on the denominator issue all the way from the tactics to the strategic?

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
As you know, we have a vocabulary taskforce in the clinical operations workgroup of this committee, and we have been focusing first on governance issues, including the value sets, as well as subsets of the controlled vocabularies that are needed for all the measures in fact. So we're finding that there's a clear need for the value sets of all the controlled vocabularies where the value set describes all the particular terms and concepts that are used in the measures, for those value sets to be published and updated, and we're focused right now on the governance process. Then we're going to focus next on enabling infrastructure to make those value sets more available.

Aneesh Chopra – White House – CTO
…input could be helpful to this body.

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
Yes, I think that's true, but that does not really get to the adoption issues at all that have been discussed here. We're just not there yet. We're focusing first on governance, who should do what, and so forth.

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
I actually want to ask a related question to the vendors. You've all made the comment that ultimately meaningful use is really about getting the improvements that IT enables, that it's not really about the system. But at the end of the day, the meaningful use requirements do require summarized clinical quality reporting to CMS, at least at the numerator and denominator level. A key tenant of making that successful for the provider is enabling the provider to generate those reports when they want them, when they need them, to be able to drill down. Is that in each of your plans? In other words, is that something you're delivering as part of the capability that the provider needs to really, you know, not just one time report the meaningful use measures, but to really participate in the program in an ongoing way?

Sumit Rana – Epic Systems – Software Developer
I can go from the Epic side. Our approach has been, as much as possible, this should be an after effect of the documentation or clinical care you've already been doing. In other words, don't make someone go in and fill out something after the fact. This should be an automatic side effect of it.

First of all, wherever possible, we're trying to do that as part of just the core clinical workflow. Then, secondly, yes, we are going to be building capabilities right into the EMR so that the – EHR, such that these reports can be generated right out as a core feature. This is not an after effect. This is not a one time. This is a core feature right within the EHR. There's also an interesting aspect of also guiding the

physician through the flow, so not just after the fact telling you, you did well or not, but if you could actually guide them through the actual use of the software itself.

Mitzi Candenas – Truman Medical Center – VP & CIO
One of the other comments that I would make, and I know that it was in a couple of our testimony just has to do with the amount of time that it also takes to get some of these measures put together, finding the denominator in many cases, and just really making sure that you have the accurate information. It does cross systems, and so part of the challenge that many of expressed is that some of that data does not exist in the traditional EHR. So we have other systems that we will either need to connect to or we will need to find in order to appropriately get those measures. But it is our intent to try to have it as wholesome as possible within the EHR, but it is a process that we have to work through, which is why I have also mentioned the detail associated with many of those measures.

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
Yes. Just to clarify, are you saying that, bring up the measures where the denominator is questionable. Let's talk about the measures that are capable of being generated. Are you saying that you're looking at that sort of drill down whenever the provider wants to look at that measure capability as a core function?

Mitzi Candenas – Truman Medical Center – VP & CIO
Core function within the EHR, yes.

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
Yes.

Sumit Rana – Epic Systems – Software Developer
Actually, in my written statement, I did have a couple more items of detail, so one was the only have measures that are based on features that are being required by meaningful use. That would be one. The second would be have measures that drive off of EHR systems that are being required for meaningful use. For instance, if some information is being captured in an ED type flow, and ED is not part of….

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
Right. Yes, I appreciate that the source data is something that you're grappling with. I'm just looking at the sort of … for how you're looking at providing this capability for the provider, so that it's not just a sort of infrequent, one time compliance reporting of summary measures, but rather becomes an integral way of the way they use that system to achieve improvements over time.

Jay Colfer – Eclipsys – SVP North American Sales
From Eclipsys' perspective, we have a tool called Sunrise Clinical Analytics that will allow you to do that in-depth reporting on an as needed basis or on a regular basis as well.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Anne, and then, Judy, I have a question on the phone as well, and then I have a question for Mike.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Thanks. If interoperability is defined, and this is my definition in this meeting right now, is defined as ability to interoperate with other EMRs or EHRs. What does level one get us from you guys, the vendors? How much interoperability with each other will there be? And how much interoperability with not each other, all the rest of the EMRs that are out there that aren't represented today, even the smaller providers? Can you set the stage of what you think the interoperability capability would be … vendors?

Michelle Freed – McKesson Corporation – VP
…question.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Go ahead.

Michelle Freed – McKesson Corporation – VP
I'll indicate it this way. In stage one, as you know, for meaningful use, for the providers, it's not an active exchange. You just have to be able to produce the record. Obviously I'm sure all of us are preparing to produce the CCD record and have that exchange ready. I think one of the challenges is, where does it go, and how does it get to the other end? You get into your previous conversation in terms of the HIEs and the exchanges and whether they….

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Keep in mind, we're looking at your innovation to help guide us in creating the standards, so I'm not assuming that you're waiting until we create the standard to provide that capability.

Michelle Freed – McKesson Corporation – VP
I could speak for McKesson. Very specifically, one of the purposes, I had mentioned Relay Health, is we have that exchange, an exchange capability today. And so anyone who is connected to the Relay Health Network has the capability to pick up those transactions, whether they're sent there in a CCD or if they're sent there in a custom format. That information is there available to be picked up today.

What I would answer your question in terms of how do we connect. If we have the capability, obviously, to connect from point-to-point as is in many cases today, we'll have that. It'll be a standard that we will be able to exchange information.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Would it be your standard, or would it be a…?

Michelle Freed – McKesson Corporation – VP
No, no. With the CCD record that we would have to produce for stage one, it would be in a standard format that could be sent or received.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Would the communication standard and the privacy and security standard be that clear?

Michelle Freed – McKesson Corporation – VP
Yes, it's all bundled in there.

Chuck Christian – Good Samaritan Hospital – CIO
I've got … let me mention one thing. I'm from Indiana, and I have to answer this one. We have, and for ten years, been meaningfully exchanging information for a variety of ways. And I'm sure you all know Dr. Marc Overhage. Marc and I sit on several different statewide communities and stuff.

We have not, in Indiana, been waiting for the CCD or CCR to be defined. We have a thing called Indiana Network for Patient Care, which was defined around specific requirements for outcomes. And it was also defined for drug seekers to see if we could identify those. It was also defined for Indiana Medicaid. I think, just defining the standards, and we were not relying upon any vendor to do anything for us. This is

all standard HL-7 transaction sets that we move around. We are also exchanging data in a meaningful use. I don't like that term any more than I like end user. Liz has heard me say that before.

Through the State Department of Health for our syndromic surveillance, and also for our bed availability project, and we're now moving, because we're already moving data, we now move into what we call a FES2 project, which will allow us to identify specific syndromic information, specific to inpatients. These things, we're not waiting for this thing called CCD and CCR for us to move that in Indiana.

We actually have three exchanges because we've accelerated the conversations in Indiana between the exchanges, and it's been really interesting to see us because one of these is a for-profit. The other four are non-for-profits, and some are using industry standard technology from Axolotl. The rest are using things that were designed through Regenstrief and some of the other things.

We're already having an impact, I believe, upon our population of Indiana by using health information exchange, and how we can expand upon that, we're having those conversations. When the young lady from ONC was here talking about, we're one of the states that they're punching their ribs every day because we have not received funding yet because our planning is done. We're ready to implement. We're ready to move to the next phase and start moving things. Sorry. I'm from Indiana, and I just had to speak up. Thank you.

Jay Colfer – Eclipsys – SVP North American Sales

I would add from Eclipsys' perspective, it gets to the issue of how do you bring that information in on a common platform, common database. Last week, we announced a relationship with Microsoft … that sets that framework, again in that spirit of openness, of allowing our clients then to bring in vast amounts of clinical and financial data to be able to normalize that data, and then be able to then do the analytical reporting against that as well. To your question, I think, from our perspective, I think the assumption is there by almost all vendors that we will have all the required documentations in those formats. But again, opening it up from a platform perspective to allow a common platform of data to be able to come into where you can report against as well.

Sumit Rana – Epic Systems – Software Developer

From the Epic standpoint, first of all, we support doing this with open standards. We would prefer a single standard for the definition itself. Today there's CCD, and there's talk of CCR. Our take is that there should be one standard for doing this.

In terms of the actual exchange of information, going beyond just being able to produce the CCD document, as we see it, there were three unsolved things. One was a phonebook, a directory of knowing where something could be routed. Second was a certificate authority, so that you could trust that the records have been signed properly. Then the third element is that of the rules of the road.

What we did with Care Everywhere was, because these didn't exist, we jumped ahead and created those. I believe we're in conversations with the NHIN folks actually to see if we can use the FSA approach to actually connect Care Everywhere back to that.

Mike Valentine – Cerner – EVP & COO

Maybe I'll chime in, because I can predict what you were going to ask, Liz, that probably ties into your question. One of the things, so you talk about innovation. We actually have, right now we're connecting to 121 unique EMR solutions, 57+ HIEs that will be active, and 599 other types of data exchanges. So we have plenty of opportunity for innovation.

What we're actually looking for is fewer opportunities for innovation and maybe more standardization and in a different way. One of the things that we tried to do two or three years ago, our CEO, Neal Patterson, had invited the largest of the EMR providers to a meeting at HIMSS actually a couple years back. The goal was to work amongst ourselves to come to a different level of interoperability because we hold more of the cards than the numbers I just rattled off. We had sparse participation in that. Some of the folks on the panel actually were participants.

But what we think is that there's an opportunity to revisit that discussion, and so we're going to come back and re-extend the invite to try to come together in a way because if you think about aggregation, we're in a pretty good position to aggregate. We represent about – this panel represents probably 70% of healthcare in the U.S. We happen to have direct connects, and most probably do as well, into every one of our client situations, whether we host them or we have a live network connection into them. So we actually have the ability to create a network very quickly.

We tried to demonstrate that, and I think we did a very effective job in doing that to create an H1N1 registry or an awareness radar. And, literally, we were able to mobilize our base in a matter of months to collect all their data and create a common repository. I think it's just an example of the power of the network once you get everyone working on the same standard and on the same initiative. But we're going to re-extend the invite. Fewer opportunities for innovation on this particular topic would be better.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics

I think what Mike is talking about, so I'll make clear what he's saying that one of the challenges that we've thrown to him is to pull the major vendors together to have a single HIE standard, so that we can begin to see that happen across the United States, because what we're really about is exchange of data between all of us, whether it's Dave and I in Dallas or, frankly, to Indiana or to Kansas City. We ought to be able to exchange data, and with so many players, it's overwhelming. You have those same connections that we do, so we applaud that effort and encourage other vendors to join in. With that, I'll go to Judy.

Judy Murphy – Aurora Healthcare – Vice President of Applications

Yes. Just a quick comment on the same topic: I think there's a natural tension being created between the innovation around the multiple HIEs and then the harmonizing effect of the NHIN. Our third panel today is going to be dealing with some of those same issues, and we do have an HIE vendor that's going to be talking to us a bit about that, so those of you who can stay, please stay.

I'm going to shift, however, focus back to the providers. I think we did a good job of talking through, we've got to get product that's good. We've got to get that implemented. We've got to get it adopted. And we have to be able to do the quality measures. On top of that, we have to do the HIE. And there's one more thing that we haven't talked about, and I'd ask the providers to comment on, and that is, what are your plans and what do you think the challenges are around the delivery electronically of information to patients? And what are your plans around personal health records? Do you mind, Mitzi, if we start with you and just go the other direction?

Mitzi Candenas – Truman Medical Center – VP & CIO

For stage one, we're primarily focused on being able to put the patient's information on a CD or USB or something, so we haven't started down the path of personal health records. We have started to look at them in preparation for stage two, and we started to look at funding. But in terms of actually, I mean, with our patient population, we know there's some significant benefit in providing personal health records. We're, in some cases, challenged as to where they would access that. But I think that's being overcome by the use of technology across the country today. I don't have anything to report at this time about what we're specifically doing, but that it's on our radar, and we're going to be addressing it. And so we're really

just trying to meet the minimum requirements for the first stage, looking toward the use of an electronic patient record.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Encrypted USBs or something.

Mitzi Candenas – Truman Medical Center – VP & CIO
Correct.

Michael Sauk – University of Wisconsin – VP & CIO
We've already implemented myChart, which is the Epic solution for the patient portal. In all of our primary care clinics across the spectrum, more than 100, patients have signed up, and I'm a user of myChart. It's an excellent piece of software, allowing you to book your own appointments, graph all of your lab results over a period of time, and it goes back years for us. Patients can look at a variety of lab tests and be able to chart exactly what you've had. We expect that we're going to finish the rollout of myChart to all of our specialty clinics by the end of the calendar year, so we'll be 100% up on patient portal for all of our patients by the end of the year.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Then you'll be using that to deliver, you know, if they want electronic discharge instructions, electronic summary of care, you'll be delivering it, if you will, through that venue?

Michael Sauk – University of Wisconsin – VP & CIO
I'm not sure that that's part of myChart. Certainly it's not something we've done.

Sumit Rana – Epic Systems – Software Developer
Yes, that is. Actually, I was the developer who wrote myChart, so I'm intimately involved with that.

Michael Sauk – University of Wisconsin – VP & CIO
There's a recommendation I'd like to make of a change. I didn't know he wrote it.

Sumit Rana – Epic Systems – Software Developer
I get plenty of those from my wife actually because she knows that I have a part in this. But, yes, you are able to actually access your discharge summaries, your after visit summaries, and many other things through myChart, including downloading your record on a USB or disk.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Mike, I was assuming that you were going to at least consider that option.

Michael Sauk – University of Wisconsin – VP & CIO
Yes. Actually, our medical records department on March 27th goes live with the ability in less than 24 hours to be able to download to a CD, as I put in my testimony, an encrypted copy of a medical record.

Aneesh Chopra – White House – CTO
If I may, one of the questions that keeps coming up is what data fields are you giving them in what format, so that when they actually plug it into something else, it can be used other than just human readable? I don't know if you've defined those specs, but that's part of what this hearing is meant to surface. How are you thinking about what that information is that will sit and, frankly, how it will be reused?

Michael Sauk – University of Wisconsin – VP & CIO

I haven't physically observed what that CD is going to look like, but probably the developer or Epic can describe how that's indexed.

Sumit Rana – Epic Systems – Software Developer
In terms of the CD's concern, our providers have access to configure what data elements need to go into that. I think there is also, as part of the requirements, there's also definitions put in place for what would be in this electronic copy and it's the core medical data set, and then I think there's a request to also add labs, procedures, and discharge summaries. So I don't have that exhaustive list with me right now, but I think that's the set that's going to be on it.

Chuck Christian – Good Samaritan Hospital – CIO
One of the things that we've looked at, I'm sure you have all heard of these things called RAC audits. Today, we have a legal electronic medical record we can produce for the patient or, for the RAC, an encrypted CD of all the electronic medical records for that admission.

One of the things we've looked at is PHRs, and one of the things that we've found is PHRs give us as much opportunity for innovation as a provider, as the vendors do connecting with EMRs. The one thing about PHRs is they are personal, and so they don't have to use mine. They could use Microsoft. They could use Google. They could use the one that the state of Indiana's Medicaid program is considering doing. There are a variety of them out there.

We've looked at the possibility of providing one for our patients, but the question is, at what point in time do we say there has to be a place that the patient's data can just go rather than we having all these solutions, because it is possible that we could be shoving that data into 8, 10, 11, 18 different places. As far as my perspective, I'm the security officer for Good Samaritan Hospital as well. Every time we expose that data, we have another opportunity to list a breach out on HHS's Web site. It's not something I want to see Good Samaritan Hospital's name behind. So we're very cautious about, how do we do this, and how do we maintain control over the data that we're held accountable for.

David Muntz – Baylor Health Care System – SVP & CIO
We currently use a combination of CDs, and we also send e-mails out to patients depending on which environment they happen to be, but we don't like that approach. The problem with CDs is what you've done is replicated something that's even more difficult than what the paper record would be. So if you try to stack them together to read them in a longitudinal way, you're out of luck. Good luck at making sure you break through the encryption that may or may not exist.

Our preference is to go with either Google or Microsoft, and our preference today is Microsoft because they have an association with Eclipsys, and we do believe that those kinds of collaborations are critically important. But the way that the patient has some control or the physician has some control is by a suspense approach, which allows you to pick and choose those items that, as a provider, you wish to send to the patient. Then for the patient to go ahead and pick and choose those things, which they wish to absorb. So there are some real opportunities to do that, and that does give us some of the innovation.

Just one more comment, and it's kind of an interesting thing. All of us have multiple vendors. I don't think you'd find a single site in America where one single vendor does it, and you can see the conversation here and the hesitancy to share information openly. Well, we're trying to design order sets in our facilities, and we're expecting physicians to come together, and then we're trying to get behaviors where they've created intellectual property that lets them get what they think is a better outcome. And then we're asking them to abandon that in order to do what's better and evidence-based. The same thing I would like to encourage all of our vendor partners because we have way too many, and that is to get

together and to have conversations. I think you all facilitating it would be wonderful, as opposed to any particular vendor hosting that event.

There's a lot to be gained by the interactions that come, and the truth is, everybody is trying to do the same thing. You're setting the bar at a certain level. We recognize it's the floor, and we all want to get to the better place, but it's the ability for us to execute on those plans that will differentiate us and make us all better. So we hope that we can see some of that from you all.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Great. In the interest of time, I want to recognize Lisa, and then I think Wes had a comment.

Lisa Carnahan – National Institute of Standards Technology – Chair
This probably won't take long because I think you've actually touched on it. Maybe Charles and David could answer it because we've been talking about sharing information, and some of the vendors, they can connect with 40 million systems and vendors and everything. A hospital is a system of systems, I realize. But when you are going to get information in, I don't know if it's from a policy point of view. I don't want to talk on the technical level. But do you sort of put information you get in kind of over there, and you don't get it into your main data that you own? I'm trying to get to, what do you do when you get the information in, and if you're going to push it out to PHRs? All this information sharing is lovely, but if you're not actually kind of integrating it and keeping it going along, I realize it's naïve for me to think that you're all going to bundle it all together and move forward. But just from a policy point of view, going forward, how are you going to think about that?

Chuck Christian – Good Samaritan Hospital – CIO
It's a really good question. Really and truly, what we've learned from our medical staff is much of the information that is meaningful to that acute care admission, since I'm a hospital, is only what's happened in a very short period of time, and so a lot of the information that takes place in a variety of ambulatory settings is not germane to that acute care visit. What happens in an acute care visit is it is very important to the physician practice when they go back. But after a period of time, it goes away. What is very important when that patient comes is related to their medications. What are they on? What are they taking? What are they allergic to? What's their past medical history and those things? Those are the things that, in our community, we're trying to come up with ways of sharing.

It's really interesting, from my perspective, is everybody wants my data, but nobody wants to send me any. And so I'm having to go out and find it, and we've done that through the INPC, through the Indiana Network for Patient Care. We're connected to RxHub and Surescripts, and there's an Indiana database for controlled substances we can also access. And so that's how we get that data in is looking. We have to go request it and bring it back in, as we need it, rather than us housing everything at Good Sam.

Aneesh Chopra – White House – CTO
Chuck, if I have a UBS drive that Mitzi gives me, and I visit you, do you upload that?

Chuck Christian – Good Samaritan Hospital – CIO
No. Today, no. The other issue is….

Aneesh Chopra – White House – CTO
Does anybody?

David Muntz – Baylor Health Care System – SVP & CIO
Actually, we disallow USB drives because they can carry viruses, and so by policy, we couldn't do that.

Aneesh Chopra – White House – CTO
Does anybody allow any patient submitted electronic data?

David Muntz – Baylor Health Care System – SVP & CIO
Yes, we do.

Aneesh Chopra – White House – CTO
How do you do it, David?

David Muntz – Baylor Health Care System – SVP & CIO
We do it by allowing the physician to make the decision. There are liability issues that go along with absorbing all of the data that's available from a patient, and so we have a variety of techniques that we use, mostly in the ambulatory setting in that regard. And then we're looking forward to doing the same kind of thing on the next version of Eclipsys, which will allow us again to pick and choose those particular items that are of interest or relevant from a caregiver's perspective, and then absorb that into our record, noting the origin of that information so that we can rely upon it or not, as caregivers.

Chuck Christian – Good Samaritan Hospital – CIO
The other issue is, if you transfer that patient from your organization, say if you receive it. Where we sit, we have several critical access hospitals around us that transfer patients to us that we may have to transfer them out to a tertiary care facility in Indianapolis. We have to be very careful about what information that we gather in and we send with a patient from a liability standpoint.

There are laws in Indiana that I am not aware of, that that's why I have a director of medical records. She's very good at determining what we can send and what we cannot send based upon the information we got in from another facility. There are some legal issues around that ubiquitous sharing of information. Just because you have it doesn't mean – if you didn't create it, can you be held accountable for either acting or not acting upon that information in the care of the patient?

Aneesh Chopra – White House – CTO
Not to put … on it, data originating from outside source, combined with data you create, creates burdens about what you send to a third entity and, therefore, my guess is the default is you only send what you create, and you leave off the stuff that was externally sourced? I just want to make sure I'm understanding the scenario.

Chuck Christian – Good Samaritan Hospital – CIO
To put a really fine point upon it, you need to ask a medical record expert, not me. I think that's a real thing that we deal with. The other thing, we are a border hospital. We provide services in Indiana and Illinois, and so the question is, when we're providing services to that patient in Illinois, whose state laws do we go with? We go with Indiana's because we are a business in Indiana, so it's not, you know, these invisible walls that happen to appear at the state borders also provide issues because the laws between Indiana and Illinois are really different related to medical records and those types of things. Then we have federal stuff on top of that.

Aneesh Chopra – White House – CTO
I'm jumping all over Wes Rishel's time. Sorry. Wes, are you still there?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst
Yes. I am. It's 9:00 here in California, but I understand I'm between everybody and lunch. Is that right?

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Pretty much. Yes.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst
I'll try to be brief here.

Aneesh Chopra – White House – CTO
Can we all wait a couple more minutes to do a couple more questions? Thank you. Wes?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst
It's always been my observation that in the business of interoperability, that is, making the business decisions to interoperate, it's better to receive data than to give data, and that seems to be what we heard. On the technology side it's the opposite. When you have a specification for how to share data, you'd much rather have them accept yours than have to adopt to theirs. So I'm interested in the intake process of data associated with stage one meaningful use. I'm specifically asking the providers on the panel, do they see in the meaningful use stage one requirements the need to import data and use it in their system? Lab is an obvious, of course, but I'm thinking more about patient summaries.

Aneesh Chopra – White House – CTO
Your question is well worth the wait, man. Keep going.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst
Yes. And if so, ask their vendors, are they better served by the general statement that that data should be in a CDA format or a specific statement, such as that data should be in C32 format?

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Why don't we start with the providers answering the question about whether you believe you'll have to input data to meet the requirements of stage one? I see nodding heads. I know you on the telephone can't see that. I'm thinking no. Does anybody think you do have to import data? I see a consistent no. David?

David Muntz – Baylor Health Care System – SVP & CIO
As I read it, you aren't required to import the data.

M
How do you interpret the medication reconciliation aspect of that? There's a certain element of data in that regard, I assume.

M
According to the regulations, I don't think it's specifically descriptive of how you get that data. The easiest way is to import that, but because you eliminate the possibility for transcription errors.

David Muntz – Baylor Health Care System – SVP & CIO
What we recommended from a CHIME perspective is that it be presented to the human who will make the decision about how to integrate or what to integrate so that you can have, if you will, a meaningful reconciliation occur.

M

One other thing about the medication while we're there, because he went there, Liz, I didn't, is that the one thing that we've found at many of our post discharge medication errors come because most facilities like ours have their own defined formulary. The patients may be on name brand drugs, but we drop them to a generic, which is the same, but the patients are confused when they go home. That discharge process of reconciliation may or may not be the absolute stopgap that everybody thinks it is because the patient goes home, and I'll use Lasix and furosemide. They basically do the same things. So you're going to wind up with somebody very quickly, if they take both of those, back in the emergency room dehydrated and their electrolytes all messed up or they're unfortunately deceased before anybody found them.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Then the question for the vendors, Wes?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst
Well, I would say it's a bit moot. I thought that maybe some of the providers would perceive the need to accept information as part of coordination of care, but if that's not the case, then the question about – well, I guess, just in general. Right now we have a sort of case requirement, which just says send a CDA. C32 is, of course, a species of CDA. But it does not necessarily specify what data is in the document. Therefore, it doesn't specify what you could do with the document. I'm wondering how the vendors feel about aloof versus a tight specification in the input mode.

Aneesh Chopra – White House – CTO
Maybe, David, if you could answer the question. When you described the scenario where, in the ambulatory setting, you might allow, at the physician's discretion, what is in and out. There's a technical question about file format is the thing in upon which the physician makes that judgment. That's what I'm saying. I show up with an instrument of data.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst
Aneesh?

Aneesh Chopra – White House – CTO
Yes, Wes?

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst
It's more than just format. It's actually content.

Aneesh Chopra – White House – CTO
Well, right.

Wes Rishel – Gartner, Inc. – Vice President & Distinguished Analyst
Yes. Right.

Aneesh Chopra – White House – CTO
I'm just curious, David. Not that you've answered that question, but if you've grappled with it, how you might accept that information upon which to then let the physicians make judgment about how and in what manner it comes in.

David Muntz – Baylor Health Care System – SVP & CIO

We have to actually import it and then stick in a particular area in a chart in some ways, and then in some of the other areas. It depends on how it comes to us. But generally what we do is we end up finding blobs of data that we have to take in, and pick out the pieces that we want.

The thing that I think is probably the question for all the vendors today, and we all struggle with as providers or collectors of information, and that is how you're going to deal with allergies within a system, because if one place reports an allergy of a particular type and the other doesn't, do you overwrite the records, and how do you come up with that? It has a lot more to do with the processes than with the technology. The technology is fairly straightforward. But again, to answer your question specifically, we're very concerned about the format in which it comes, and we like the standardization process because we think it will help us exchange it more easily.

Aneesh Chopra – White House – CTO

The philosophical question, before we break up, and the reason why this is such a fascinating panel, and first of all, just really thank all of your for your candid feedback. This is terrific. I want to connect a couple of dots in my head just to make sure I'm going to connect a Carol comment, a Wes comment, and a David comment, and see if I'm grappling with this correctly.

Carol asked a philosophical question that says, here we have a sort of fairly dramatic impact on the industry in terms of meaningful use and shifting what it is that we're trying to get you all to do that, in theory, would open up just all these creative minds and conversations with physicians that ties to David's comment about change management. Let me see if I can attempt to make that conversation linkage.

If I'm a physician today, and you have to give me change management on a product that I really don't want to use, you can really invest heavily on change management. But at the end of the day, I really don't want it. If Carol's question is, we've opened up the dialog about what you really do want to transform care for the better, improve quality, and so forth, does that in effect lower the need for cash investment in change management because people are going to be jumping over themselves wanting to be a part of that future because they're going to want to see the numerators and denominators on their quality metrics so that they can, as a group, find ways to improve and engage and so forth.

And so that was the tradeoff I heard, Carol, in your comment and, David, in your comment. The question was, what's the constraint? If the constraint has been lifted, might that be a better place for the dialog? And that led to the conversation that Wes raised, which is, there are essentially two sources of input. I'm going to get this wrong. It's like 20, but we have the requirements around the data following the patient in terms of the referrals. We have the patient gets a copy of the data. And in both cases, they could be in completely different formats and with different content. If you've got at least two meaningful use criteria with information external to an organization that you then have to input, it appears to me that there's not a lot of clarity yet.

And I don't know how much movement the industry is having on its own in sort of reconciling, but there may be in fact multiple ways people can bring information to an organization to then render the judgment what is acceptable or not. Not even mentioning the legal questions that Chuck raised about what you're allowed to forward on to a yet third party, which is your stuff versus someone else's stuff. That's what I was trying to understand philosophically why this hearing has so much value is in somewhat of a bummer view from my sense.

If you all haven't said we're all over this. Man, we're so excited about the fact that we're going to dive deeper on quality data. Carol, you're absolutely right. We're grabbing our vendors, and we're saying, help us come to the promise land because our doctors are clamoring for this, and they're going to help us

define that future. And, oh, by the way, we're going to empower our patients in new and creative ways. That is not the message I have heard from the group.

What I heard was, we're going to achieve meaningful use, as the requirement by 2011. And so I guess that's just my summary. I don't know if I have a dream for what the world may be, but I'm just curious. Did I get that right, Cris Ross?

Cris Ross – MinuteClinic – CIO
I think it's a huge issue.

Aneesh Chopra – White House – CTO
That's the question. I don't know if you have a reaction. Do you feel constrained to this dream of the world of the future? Is there a problem? Is there an opportunity?

Chuck Christian – Good Samaritan Hospital – CIO
Let me give you an example, Aneesh. In Vincennes, Indiana, there are 18,000 people. In that population, there are three Charles Christians. One is E, me. There's a W and an L. One's birthday is one month away from mine. He is not allergic to anything, and neither am I, but the other one is highly allergic to a lot of things. I am very concerned that when they hit the emergency room, if we mesh those records together, they give him the wrong medication because they think it's me, they will kill him. And so we really truly need to consider about – I think Michelle mentioned it. We're highly concerned about how quickly we do this because if we don't do it correctly, and we don't do it thoughtfully and carefully, we will create opportunities to hurt people.

If a physician assumes, and I'm not suggesting they're going to, assumes that they have the right patient. They're presented with that information and do not ask the right questions, and do not do a thorough initial examination before they determine a course of treatment, we create for them an opportunity to hurt folks, and that's not what we want to do. We want to create an opportunity to provide a better, higher quality of care less expensively. And so we have to be very careful at the speed in which we do some of these things because we've got to make sure it's right.

We just can't throw it – as my daughter says when I was teaching her how to drive. Daddy, whip it out there and hope for the best. Well, when she starts paying her own car insurance, I think that she'll have another thing. If it's me in the emergency room, and I'm unconscious, and they'll be able to access my record, then I'm in really good shape. But if they pull up the other guy's record, I'm in trouble.

David Muntz – Baylor Health Care System – SVP & CIO
By the way, we're as pleased as punch that this is going on, so if you didn't get that message at the beginning, you should.

Aneesh Chopra – White House – CTO
No, I get it.

David Muntz – Baylor Health Care System – SVP & CIO
That's what the CHIME survey says is that we are thrilled that this is happening. The order in which you are encouraging us to do this causes us some concerns.

Aneesh Chopra – White House – CTO
Yes.

David Muntz – Baylor Health Care System – SVP & CIO
And almost all of us concerns, and the question is, are we going to do this exactly right? That's where the time constraints bother us. That's where the availability of capital, that's where the ability to absorb change are. So you're hearing a mixed message because we're getting a mixed message, and we're sending one purposely. I think it's going to be a wonderful world. The fact is that the standardization is the thing that we have forced on our caregivers in order to get us to the point where we can then do the innovative things. And so if any words of encouragement, it's great, but the concern that we all have as CIOs is the pragmatism or the practicality of what you're recommending. And because we are so anal-retentive, and I do have a T-shirt does anal-retentive have a hyphen on it, then we need to really fully understand….

M
It's all one word.

David Muntz – Baylor Health Care System – SVP & CIO
No, it's not. It's hyphenated, for the record. But the fact is that we need very specific answers to the questions that we're raising here, and that's what CHIME tried to put forth is we're thrilled about what you're doing, I mean, happy as we can be. And you have to answer all of these questions for us in clear, understandable ways so that we, as the community, can do what's necessary.

The thing that I saw happen when CHIME worked together with other organizations that are responding is that you've got essentially harmonization of ideas. You've got collaborations that I'd never seen before. And you ended up with innovation that was created as a result of it. And so I'm very much in favor of what it is that you're doing, but I just want to make sure that you're asking all the right questions and that we're providing all the answers to help clarify.

M
It's called cautious optimism.

Aneesh Chopra – White House – CTO
I like that. That's a great term.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
It is. Mike?

Michael Sauk – University of Wisconsin – VP & CIO
And the question is?

Aneesh Chopra – White House – CTO
Just reaction generally to this notion of how do these pieces come together.

Michael Sauk – University of Wisconsin – VP & CIO
What I'm concerned about is that we're in a position where we have built the house. We have the foundation. All the walls have been painted. Now we're worried about interior decoration. But there are a lot of people who haven't bought their property yet, and we're going to try to help out. We're exploring the ability to help out small community hospitals that are in our area, and we have a relationship with, to try to help them get a solution. But, I mean, they are just dealing with the basics, and so much of what we talked about today is way beyond anything. Certainly the federal government won't have to worry about significant funding over the next couple of years because a lot of the people, even at this table and around this room, have not done CPOE yet, and that isn't done overnight.

I'm happy to be where we are, but I think we're all going to have to help each other to get to a level playing field, and the exchange of a lot of the things we're talking about with patients bringing in CDs, a lot of the systems, hospitals they go to don't even have an EMR, bad enough be able to give them a CD to bring with them. So I think what I'm trying to say is I think that we have to set sort of a picture of where we want to go, but I think we have to start somewhere, and I wouldn't – by setting the goals so high, I think a lot of people get discouraged. Hopefully things are structured in a way that people can see progress, and they see a value.

Aneesh Chopra – White House – CTO
Mitzi, did you have a reaction?

Mitzi Candenas – Truman Medical Center – VP & CIO
I was just going to concur with my provider colleagues. I think that my comment about needing one minimum standard is it really reflects the fact, as Chuck said, that we have to do this in a way that's safe for our patients. And so, taking a very incremental approach is important to us. We still have a lot of work to do, and we have a good path to get it done. But to say that we're not excited about it, I think, is a misstatement because we are. Certainly, as CIOs, we've been, you know, we were kind of salivating when we first heard about these standards because it's like this is the stuff we've been telling everybody is so great and wonderful. We've been in this business for a while. We really want to get it done.

But again, we have to do what's safe for our organization, for our clinicians, and particularly for our patients. And so to kind of take this incrementally and look at the goal being initially to meet the stage one requirements with the idea of going forward and continuing because ultimately we're all trying to impact the outcomes of our patients, so that's where we really want to be. And we want to do that in a way that's safe. So I think that the others on the panel have probably said it better than I, but I think it's very important to hear that, that we're cautious, and this is hard. If it was easy, we would have all done it already.

Aneesh Chopra – White House – CTO
Very impactful conversation, I want to thank you for this.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Absolutely.

Aneesh Chopra – White House – CTO
Liz, round us up.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Thank you, guys. What a great panel. You know, you've given us lots of information that we need, and for those of you who know me, you know I have your telephone numbers, so expect the conversation to continue, but thank you very much, and we'll break for lunch. I think Judy has one—

Judy Sparrow – Office of the National Coordinator – Executive Director
Come back at 1:00, yes.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
We're coming back at 1:00. Okay. Thank you, guys.

Aneesh Chopra – White House – CTO

Great work. Thank you.

(Participants Break)

Aneesh Chopra – White House – CTO
Liz, is Judy next?

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Judy is next. Has your … assembled?

Judy Murphy – Aurora Healthcare – Vice President of Applications
I think they're all assembled. Okay. This is the implementation experiences panel continued. It's kind of part two, and here's where we're shifting from the more traditional, integrated delivery network folks to kind of a hodgepodge really of different types of organizations testifying on meaningful use. We're going to start with Amanda Parsons, New York City Primary Care Information Project.

Amanda Parsons – NY PCIP – Assistant Commissioner
Good morning, Chairman Chopra, and members of the HIT Standards Committee. My name is Dr. Parsons. I am the assistant commissioner of the Primary Care Information Project, and also the project director for the New York City Extension Center. We're delighted that we have 1,800 primary care providers who are live on a prevention focused electronic medical record through our efforts. I don't want anybody to leave here thinking that we are an HIT project because we are not. As an arm of the Department of Health, our goal is to improve the quality of care that is being delivered to the patients, and we do that through health information technology. We express strong support for the meaningful use measures and standards that have been put forth by the committee, and I have attached for you our comments on the notice of proposed rulemaking, which I won't go into today.

You asked today what is our roadmap for helping to achieve meaningful use. What are the things that we are going to focus on? First and foremost, I'm going to tell you, we are going to continue this hand-to-hand combat, and I call it that because it really means going to the physicians' offices, not fighting them, but working with them and really helping them digest all of the good work that's being done out there, and bringing it to them in a such a way that it is aligned with the work that they need to do. And it's that presence that really, I think, has yielded the success that we've had in our project. The three areas that we're going to focus on that I'll talk about today are documentation hygiene, e-prescribing, and sending reminders to patients.

Let's talk a minute about documentation hygiene. For us, this is the underlying framework upon which everything is built. If it's not in the chart, if it's not in the correct place, you're never going to run a clinical decision support tool on it. You're never going to be able to share it with another provider. You're never going to be able to use it to identify patients who need care. And so you would think that this is easy, that providers get an EMR, and they start documenting in the right place, but they don't. And it's been very hard.

We've been working with our vendor to figure out what of the flexibility in the tool do we actually lock down? And we've actually, for instance, locked down blood pressure fields because we don't want them to put blood pressure anywhere else because otherwise you can't operate the clinical decision support. The same thing with smoking, we designed a smoking cessation smart form because we didn't want them to say patient is a smoker, currently smokes, because you can't do any of the work that you need to do without that information in place.

We're going to continue to help providers understand how to change the way that they chart right now into how they chart in their record. We do this by knowing the record incredibly well, and as we become an extension center, we're going to have to learn more records and adjust the e-clinical works one with which we've developed significant expertise.

On the point of e-prescribing, this has been a challenge for New York City in particular because there are a lot of small, independent pharmacists, many of whom may have electronic prescribing set up, but they don't use it. They don't know to use it. They don't know that it's there. This has certainly been a big barrier for us, and one that's been eliminated by the big chains, but I think still a struggle for the small independents.

In addition, we're hearing from patients loud and clear through what the doctors are telling us that the patients want a paper record of that prescription. They actually want to walk out with paper in hand, and that's been difficult. And they're also not ready, at the point of care, to say which pharmacy they're going to go fill that prescription at. And that is also a tricky workflow, and so it's not just about the functionality and the record. It's about explaining to a provider what he or she is going to have to say to a patient to get the patient to be comfortable, perhaps walking out without a piece of paper, perhaps having to make a decision right now about where I'm going to fill this script because I'm not going to get a piece of paper that allows me the flexibility to make that decision later.

Lastly, physicians don't really understand the benefits of e-prescribing. They don't have any incentive to use it. And so, for them, you know, they don't think of their prescription pad as dangerous. They think of this computer that they're not really used to as a thing that is dangerous because the one time that they put in a medication, and it was the wrong one, and they almost picked it, you know, that's the story that they remember. And so it's been really tricky.

In terms of sending reminders, we are so excited to see that this is part of the meaningful use package. It's something that we've actually done a lot of work with. But as one of our providers reminds us, anything that takes away from physically seeing a patient is not rewarded. It is not paid for, and so we can build all of these functionalities all we want, but if we can't figure out a way to get the providers to use it as part of their workflow, and to be reimbursed for these messages that they send out that may yield return e-mails or return phone calls, then I'm not sure that we've followed the whole picture, but I'm really, really excited that it's in there. And we're working through. It can be done. It just takes a while to figure out how, and it takes a while to test the tools, and that's really what we're working on.

Lastly, I think I'd like to leave you with the fact that even with all the different sophisticated EMR vendors out there and the hardware and the money, it's still going to require somebody working with these providers, particularly the ambulatory care providers, helping to bring it all into their offices and help them understand what it is they'll need to do to change. Thank you. I look forward to your questions.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Thank you. Now we'll turn to the vendor that is affiliated with Amanda Parson's work in New York, and that's Sidd Shah from eClinicalWorks.

Sidd Shah – eClinicalWorks – Project Director
Good afternoon, Chairman Chopra, and members of the HIT Policy Committee, and all the panel members here seated. My name is Sidd Shah, and I'm the program manager for the New York City Primary Care Information Project from eClinicalWorks.

eClinicalWorks is a leading ambulatory clinical solution. Our company is unified electronic medical records with built in e-prescribing, order sets creation, clinical decision support system, integrated practice management solution, patient portal solution, manages patient workflow in clinical settings in check in to check out, allows patient secure communication, and streamlines practice workflows. We also extend the EHR outside the reach of the practices, outside the practices' walls in terms of offering them mobile, browser based access, Web based, voice and text messaging services, giving them advanced interoperability services like with our heath exchange product. All of these are available right now as part of the Primary Care Information Project.

The Primary Care Information Project by far is one of the largest public health projects in the country, and we are very proud of our accomplishments to have 1,800 physicians live on our system. And it's been within the last two years that we've done this. An interesting fact that I want to state here is that the 1,800 physicians that are live are part of 350 independent practices. These are solo private practices, federally qualified health centers, and some of them are mid to large size outpatient hospital clinical settings.

As part of this project, we have learned and implemented public health functionalities, which was critical for this project, which includes population health, clinical decision support, as I mentioned, for chronic conditions, and then use of order sets. This has really changed the way healthcare has been delivered to patients in New York City. These features have been developed with a lot of assistance from the Primary Care Information Project thought leaders and the city Department of Health.

One thing I would like to highlight is that today every doctor in New York City who uses eCW, electronic medical record and … system, has clinical decision support, which is actionable, and they are adopting this, and it is proving that they're adopting this in a positive manner, which is giving us a lot of momentum to make more changes, more new changes, and innovate basically. Providers are also able to electronically send a patient … data, send syndromic data, system use share to PCIP, which would then run aggregate level reports, community level reports, allocate resources in the field to provide assistance to practices, and also run incentive programs like the … program, which has been offered to providers in New York City. In support of our clients, we also offer a complete suite of implementation services, which include project management services, technical architecture solutions, installation services, workflow analysis, onsite hands on training, go live support program, and free education ongoing product trainings.

On the question of our roadmap from where we are today to certifying for meaningful use, from my interpretation of the meaningful use measures, we meet all the 25 stage one measures today. However, there are certain measures, which we might have to kind of, I'd say, continue to get defined and clarified. We might have to … them further. But we continue to meet all of those measures.

In terms of the challenges, I want to bring up some specific challenges to this committee. One of them is measure definitions, which are, as I mentioned, not completely defined. I want to give an example of the medication based measures. There are different drug databases, which are used by EHR vendors, and all of these use non-standard vocabulary or naming conventions, and we would really hope that there was some ability of NDC codes or of the like available so we can get that coded in the system. The start of measure contribution has also been reaching out to people who have more information, and it has run into challenges to get responses, and I think that would be another area where we could get some help on.

Thirdly, I want to talk about lab companies. In the past, they have refrained to build interfaces for practices, which have low volume lab tests that they send out, and we feel that it's going to be tough for practices to hand key this information in the EHR systems, even if the discrete data fields are available, so that's another challenge. Fourthly, the testing times for lab interfaces is also a big concern for us

because that really takes time. …Amanda, that she mentioned about the e-prescribing piece, so that's one other thing.

But then there are other tools that we provide, and I'm running out of time, other tools that we provide, which are ongoing and onsite assessment options, physician dashboard options in the system, which give providers the ability to run meaningful use measures in their system. Thank you.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Thank you. Now we'll move on to Dick Thompson from Quality Health Network in Colorado.

Dick Thompson – Quality Health Network – Executive Director & CEO
Good afternoon. It's a pleasure to be in the area. The background on us, quite simply, is we're yet another nonprofit collaborative founded within our community with a focus on trying to improve the quality of health of the people who live there. It's our objective to unite all the disparate provider organizations that are in the area, so we're in the cat herding business. It's very key and important that we understand that once you've met one physician and one workflow, you've met one physician and one workflow. So there's been a lot of focus on Grand Junction in the last 18 months. The *New Yorker* article that Atul Gawande did comparing us to others, the President's visit last fall, Dartmouth Atlas recognized our providers for the work that they've done. But our focus has primarily been about care coordination and care transitions.

If I could just see my doctor 7/24, life would be pretty easy for me, but not necessarily for my doctor, so it's the handoffs that we've been focusing on for many, many years. So we intend to continue our focus of those important handoffs, and our objective was to connect all the providers electronically. To date, better than 85% of the providers of all types, from acute care, ambulatory care, surgical centers, urgent care, home health, behavioral health, hospice. You name it; we've connected them. So we want to continue that focus and continue to use incentives to help engage physicians.

Dr. C.T. Lynn of the University of Colorado has said it pretty much the best, and he says workflow eats technology for lunch. So those of you that had lunch, some of it probably was workflow, so we've been doing that for years. In effect, that's practice redesign. That's getting to understand what we need to do to help make practices more efficient and to help improve the quality coming out of those practices.

We've been deploying registry tools for several years, and we've been reporting quality metrics from those registry tools to a local health plan for pay for performance and for peer review kinds of purposes. In effect, what we've tried to create is a no wrong door environment so that no matter where a patient presents, clinical data will be available at the point of care to help the clinician make a better decision. What that ends up, from a pragmatic sense, is there are 29 different EMR vendors that we have to interface to and that we've been in the process of doing it. So the EMR interfaces are very key for us.

At a minimum, we'd like to get a progress note out. We'd like to get an electronic referral out. We'd like the electronic referral to precede the patient's visit to the consulting patient, not come after the fact. And we need to improve our registry functionality as it relates to meaningful use so that we have more physician alerts that can be pushed to the doctor, and a better physician/patient communication vehicle so that we're all on the same page there.

Our greatest challenge is really the engagement of physicians and EMR vendors in our cause. Sometimes I think the various vendors think we're their enemy, and in fact we're not. We're the friend. We're trying to aggregate the data so that no matter where that patient is presented, if there are three different EMRs in three different registries, we believe that if we're talking about patients, we have to

understand and have, I'm going to call it, a registry of registries function, so that we know what's going on with the patient, not just necessarily the physician activity within a practice.

For us, I think the key ingredients will be to improve the registry functionality and to develop a patient portal that will allow for much better communications, as it relates to the meaningful use criteria. The simple thing is to try to improve the handoffs, and that's the most difficult thing to do, the right data in the right place at the right time. And when you've got different hospital systems, different EMRs, different physician practices, that connectivity is the key. And we would suggest that we can't move fast enough towards implementation of health information exchange because we think that's where the value is. If all we do is replace a paper chart wall with an electronic medical record that does not communicate with others, I don't think we will have accomplished what we're up to, so thank you.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Thank you, Dick. Again, now we'll turn to the vendor associated with that project, Ray Scott from Axolotl.

Ray Scott – Axolotl Corporation – Cofounder & CEO
Good afternoon. Thank you very much for the opportunity to testify. My name is Ray Scott. I'm the chief executive officer of Axolotl Corporation, and we are the provider of health information exchange technology to some of the country's leading health information exchanges, including three state-wide exchanges and four regional exchanges in New York.

We are a standards based organization, and have been in existence now for 15 years, so we've been doing health information exchange long before it was called health information exchange, and using what standards were available at the time, principally HL-7, to provide transactional clinical interchange. We have worked and supported a number of the standards bodies to help develop things like CCR and CCD, and have the ability to communicate those now within our exchanges. With the view to satisfying the requirements of meaningful use and helping our customers do that, we believe the health information exchange has a very critical role to play, and perhaps not so critical in stage one, but a growing role in stage two and stage three.

If I look at the challenges that we face, the principal challenge is perhaps in the area of PHRs, and we intend, a bit like our connectivity to EHRs, to provide a patient health record gateway that will, out of the box, connect with standards like Google's offering and Microsoft's offering. But we expect to be able to link it up to a number of the other personal health records that are out there and supported by payers and employers and various other organizations.

I think one of the important points that I'd like to make is that the health information exchange is really an aggregator of data or potentially an aggregator of data, and there is perhaps a danger when we look at measuring meaningful use by focusing entirely on physician behavior, as recorded within the physician's EMR, that that is in fact a data silo and doesn't accurately reflect all of the information, the clinical information we may have on a patient's well-being. If you move to the HIE level where you have access to that data, perhaps there's a service that could be provided on behalf of the community to report some of the meaningful use measures in a way that in fact is more meaningful in terms of that patient and the ultimate outcome that we seek to measure, and that you seek to measure in the years ahead. I believe that we should consider maybe allowing HIEs, particularly the statewide HIEs, to provide a set of services that might assist individual physicians in their practices to meet the requirements of meaningful use.

You asked amongst the questions what the largest challenge was that we faced or the most significant challenge, and I don't think it's a technology challenge. I mean, yes, there are things that we will need to do to our products, very few, fortunately, to meet stage one, but certainly more things that we will need to

do to address the requirements of stage two and stage three. But technology isn't the biggest challenge that we faced. It's really the timing. The time scales here are very compressed in terms of how long it takes to roll out new systems to communities, and connect those systems up to test them thoroughly and to replace the existing ones.

If you look at the analogy in the acute care centers and how long it takes the acute care vendors to roll out new systems, it's the order of a year to two years to implement a new system. So even if we had all of this technology ready to go today and working, it would take us a year to roll it out. So I think we will be able to meet the requirements for some of our customers for meaningful use in 2011, those that are already advanced like Quality Health Network. I think some others that are more recent, it will be difficult to meet those timescales, and we'll be looking into 2012 before we can go that. Thank you.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Thank you. First person to finish early, I believe. We'll move on. If you could set the timer at eight minutes on this one, John Blair, we've giving him eight minutes because he's got both the vendor side and the practice side or provider side, if you will, and I'll let you firm up your description of exactly why that's the case. But I believe it has to do with independent physician organization, as well as the health exchange in that region.

John Blair – Tacanic IPA – President & CEO
Yes, that's right. I'm John Blair, and I want to thank Chairman Chopra and the workgroup for the opportunity to testify, and specifically Liz for calling me and asking me to telling me to get down here. Judy, I thought I had ten minutes.

First of all, we just finished a fairly extensive review of our EHR adoption in the Hudson Valley, and we're currently at 43%. Our primary care providers are using certified systems in the Hudson Valley, and about 37% of the general ambulatory providers across the Hudson Valley. This has really been accomplished by the work of three organizations: the independent physician organization, Taconic IPA; a health information service provider, MedAllies; and also a concensus driven, community focused, multi-stakeholder, regional health organization, and that's the Taconic Health Information Network and Community, or THINC; so it's really been all three of those that have worked together to accomplish this.

The IPA has really provided the leadership. It's been around since the late '80s. And then in 2000, became focused strictly on quality improvement, use of technology to achieve that; 4,000 physicians currently in the IPA. THINC is really convening the community, providing leadership, a common culture across disparate competing stakeholders for our efforts to almost really create a virtual, integrated, delivery network in the Hudson Valley. It's very important to achieve some of this. And then MedAllies is trying to coordinate across multiple vendors. We work with several vendors and have developed deep and, well, very deep expertise in implementation and physician practices.

As I said, MedAllies, it's somewhat unique. It's not an EHR vendor. It's really an implementation company. And, again, at least over the last three years, has gained a tremendous amount of expertise in EHR implementation. We've looked to the south to Amanda's project and have learned from them, and also the comments made on care coordination, I think, I can't state those more strongly, but that's become a very important aspect of what we're doing.

I'll talk a little bit about how we currently approach things, where we are or where we think we are with meaningful use, and then finish up with challenges. Just the Hudson Valley, to give some understanding of the demographics, it's a little shy of 2.5 million patients. It covers nine counties or there are nine covers that we cover in this. And this really has a very broad, socioeconomic range, densely populated,

impoverished, inner-city areas. There are affluent suburbs, towns, and villages throughout the Hudson Valley. There are very sparsely populated, rural areas. And our primary care rate per patient ranges from 22 to 104 per 100,000 residents in the Hudson Valley, so you can see we have a broad range here.

To just give a little bit of MedAllies' history, we've evolved over the last ten years from helping to implement and get adoption of portal application products and physician practices. We then moved on to freestanding e-prescribing. And the last four years, we've been doing comprehensive or complete electronic health record implementations.

Currently we will be, probably by the end of the summer, have implemented over 600 electronic health records or over 600 providers. We expect to have 750 by the end of the year. We range in sizes from solo practitioners to groups over 100. We've implemented private practices, hospital owned ambulatory practices, federally qualified community health centers, so we deal with all ambulatory settings.

The three things that I would say are critical to be able to do ambulatory implementations is, one, the workforce has to be highly skilled, and I'll talk a little bit about our breadth on the workforce, and we believe local, that there needs to be a local presence to have the continued effort in this practices to achieve what we've achieved. They have to have very deep knowledge of the applications that they're implementing, and we feel that they have to have a thorough understanding of an ambulatory practice. They have to know what that's all about in those different settings to be able to achieve what we've achieved.

We do use best practices. We've traveled many places, looked at many organizations, to achieve the highest level of utilization of these systems. And just to give you an example, for those of you that are familiar with the patient centered medical home initiative and the requirements for NCQA recognition. We just finished a project last year of our primary care practices, not all of them, but we just got 237 primary care providers over 51 sites to level three NCQA recognition for advanced medical home. So for those of you that are familiar with it, you have to be using these systems in a very robust manner to achieve that. Now medical home is not all about IT, but you really have to have these implemented well to do that. It's a whole other discussion what medical home is about.

Anyway, where we are currently, as I said, because I see I'm running out of time, our implementation team has clinicians on it. We have trainers, systems analysts, business analysts, project managers, full call center, all local. We have a chief medical officer with ten years experience implementing in a large university system that's now involved in overseeing this and will be developing our meaningful use rollout as we move forward. We train. Since we're local, we can continuously train at the practice sites, and we have a local training center in the region where we can pull practices together to have, when we roll out a new version or something like that, to bring them in and to create efficiencies there.

We have a services or a hosting capability for the small practices. Larger groups, we've done installations for their data centers, so we allow both of those. Even though we have some groups over 100 that are using a hosted model.

Our implementation is a comprehensive, electronic health record, practice management system. We make a real big deal out of electronic prescribing. We've had an effort the last year with Surescripts. When they go live, we have lab bidirectional interfaces that run solo practice up to 100 doctor groups, critical to have that running well. Documentation at the point of care happens.

Let me just talk quickly about the practices. Can I get one more minute? Okay. So in terms of practices, we really assess them. And, at this point, we probably turn down one in ten because it's critical for

clinical and administrative leadership. There has to be a commitment to usage. We don't do a group that's going to do partial paper, at the end of the day, and partial electronic. We look at their financial stability. If there is an issue, we'll remediate and help them, but we won't take on a practice that we feel may go bankrupt through this. So we have a fairly extensive assessment process.

We take about four to six months to do a small practice. It can be over a year for a large practice, and without going into any more detail on that, just a couple of things on meaningful use. We think we're there on all but two areas. We struggle with the 10% on electronic access just because we don't know how to deal with that workflow, and how to handle that, and we also have concerns about the electronic syndromic surveillance because we don't know what the catcher is going to be on the public health side for that.

A couple of just in terms of challenges, I won't go through our challenges last year. It's in my handout. But currently what we see is we have concerns about structured data entry at the point of care, particularly where that gets to registry functions, quality reporting, public health reporting, and we believe that one is the software because meaningful use is going to change, I think, how the software is designed. And as meaningful use moves that software and user interfaces to make it more facile for that data entry, and implementation gets to that kind of thing, we have seen that we get better and better. Amanda talked about locking down some of those fields. The same principle, so we believe the software will get better. Implementation will be more focused on that and, certainly in the long-run, incentives will have to start to drive some of that on outcomes and ultimately the data entry. Thank you.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Thank you. Our last set of testifiers, I'll turn first to Jen Brull, a solo family physician practitioner from Plainville, Kansas.

Jennifer Brull – Family Physician
Thank you. I read through the bios last night in preparation and decided that I'm standing among giants, and appreciate very much being here. I hope that I'm here to give you a little bit of a different perspective. As I was running on the treadmill this morning, they showed a map on CNN of a population density map of the United States, and you see these big black areas in New York, D.C., L.A., and some smaller ones in the middle of the country. And I'm kind of the space between the dots, so I am a solo family physician, but I collaborate with two other solo family physicians, and we did this EHR transition together.

We started back in 2004 when we implemented a registry, a chronic disease management registry, and looked at our hypertensive and diabetic patients. And then two years ago, we purchased an electronic health record, and implemented that successfully. I loved Dick's quote, which is, workflow eats technology for lunch, and it's very true. Our challenges were not software related; they were workflow related. Once we got over those things, I think we could see the light to where we were going.

Amanda said that getting doctors to do things that doesn't involve getting reimbursed immediately is sometimes challenging, and I think that that can be true. We have seen reimbursement actually increase. We've been very pleased with that. And you may not think that sending reminder letters generates you money, but it does because when you get abnormal labs, or you tell people they need their pap smear, they come in and see you, and that's money. And so, tangibly, it can be difficult to see in the short term, but give it a little bit, and it's there.

The other thing that all of us see on the horizon is P4P. We're all going to be asked to prove that we're doing a good job, and if we're not sending reminders, then we have no idea what the population of our patients is really doing when it comes to their control of their chronic diseases or acute health issues.

We had some resources, I think, that are unique to our setting. I was a physician champion, and I've been intimately involved with this from the beginning. My colleagues are good guys and computer savvy and were definitely positive on doing this, but I definitely was the cheerleader. The other thing is, the cheerleader is married to the IT God, and so my husband is our amazing database programmer, computer fixer, and so pretty much 24/7 we've had IT support, which is not a hurdle that we had to overcome. Yes, he does what I tell him to, no, some days, so that was something that we had that I think was unique to our site, and not typical of the space between the dots.

We also had an amazingly willing staff. We do not have 15 people working on change management, as I heard someone say this morning and was very jealous. We have 15 people, but those 15 people were great, and we lost not a single person in our transition, and we gained two providers. So we didn't expand our staff. We gained to providers. We didn't expand our support staff, and nobody left, and no one would go back to the way that we used to do things.

Challenges that we had, we have no state-based HIE. We have a few early efforts. They're all centered in the larger places in our state. That's not the space between the dots. We do not, at this point, but are working, I think, aggressively with our vendor to get connectivity to immunization registry in our state. e-prescribing has been a challenge because a lot of mom and pop facilities, and they don't buy that computer stuff, and so for us to get connected to them means that we fax it. We do all of our prescribing through our EHR, but we fax them instead of e-prescribing.

Then lab interfaces, again, looking for that concrete codified lab data has been difficult because they're expensive, and they're challenging to implement, but we're getting there.

Where we're going from here, our lab interface, I hope, is going to be up in the next month or so. We're going to purchase RxHub. We'll allow bidirectional communication with those facilities that are on Surescripts. We have individual efforts ongoing with our vendor, collaborating on some issues that we see and they see, and I think have been very responsive to our needs. And I'm involved on an individual level with our state HIE efforts, so I sit on the e-health advisory committee and HIT REC committee, and trying hard to be involved so that those of us out in the small part of the state get involved. I think we're going in a good direction, but I think we still have some things to get to meaningful use.

I wanted to finish, Mr. Chopra, with your quote about physicians seeing the promised land and demanding to get there. I think that those of us who have successfully implemented an electronic health record, we know what the promise land is. And, you know, it's not quite nirvana, but it's a heck of a lot better than where we came from. And I think we're quietly working to get there. There just aren't enough of us who have made that leap of faith to get there.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Thank you. Our last testifier is Maria Rudolph, who is going to talk to us from the vendor perspective, eMDs, which is the vendor that Jen Brull uses.

Maria Rudolph – eMDs – VP Medical Informatics
Good afternoon. First, I thank you and Dr. Steve Baldwin from the AFP for inviting eMDs, an ambulatory EHR company, to participate at this hearing. My name is Maria Rudolph, and I work to facilitate

knowledge sharing among eMDs staff and external stakeholders, as well as serving as a physician advocate for our customers. The following is a summary of my written testimony.

Dr. Brull has identified the community exchange of information as a challenge for her practice, namely lab result interfacing, connectivity to a yet nonexistent HIE, and immunization data exchange. For lab results, we find substantial variability in the willingness of hospitals and laboratories to subsidize costs. Reference labs and some hospitals will fund the interface cost for physicians if there's sufficient volume generated to justify the subsidy.

Widespread adoption of a single lab standard could potentially drive down the cost of interface development and validation for us. To date, we see little uptake of the ELINC specification. Most lab systems use a version of the HL-7 standard, but not in the way prescribed by ELINCS. Nonstandard or what is called Z-segments in messages, and lack of use of LOINC codes remains prevalent. Each lab interface is a unique effort for us, requiring substantial development costs because we cannot leverage a reusable standard.

Connectivity to Dr. Brull's public health information registry did require the resolution of some design issues on both our and the registry software, and we anticipate successful connectivity. We connect in other states using the CDC format, so this is not an issue of our inability to connect to registries. Our challenge remains that not all state immunization registries have adopted the CDC format. We identified this as an important issue in our public comments on the CMS NPRM.

Although there is yet no HIE in Dr. Brull's area, we emphasized the need to have a single, best practice standard to connect. Like lab companies, HIEs have no certification requirement to adhere to a specific interoperability standard, and our relationships with regional HIEs reveal a variation in connectivity requirements. This variability is costly to us and unnecessary, given the continuous accelerating adoption and support among EHR companies of interoperability standards, namely the constructs defined through HITSP and tested in HIE connect-a-thons. eMDs has already invested resources over multiple years to develop products ready to support these standards, including CCD and XDS.

I'd like to make the point that there has been a view that prescription around standards is undesirable because it stifles innovation. Although flexibility is certainly needed to develop user interface and user experience interactions, interoperability to be truly seamless requires standardization on content and transport. We urge ONC to use the work by HITSP to advance standards based interoperability for HIEs.

We are a CCHIT certified vendor and are confident that our system will meet the certification criteria, as we understand them today. We have identified the need to expand our reporting and data collection capability based on our interpretation of both the HIT functional and clinical quality measures.

In the past, we streamlined our customers reporting burden by recommending measures that are widely reported and developed canned reports on measures focusing on chronic conditions such as diabetes and cardiovascular disease. Our customers often lack resources specific to customer report writing, except this one, and even practices with their own IT support require knowledge transfer about our data model. Our reporting roadmap allows us to incrementally increase our portfolio in a safe and efficient manner to meet customers' needs through the stages of meaningful use. Initially, we are developing reports for each of the measures, as we understand them. We believe that this would be the easiest and quickest path for clinicians to report meaningful use.

In addition, we are working to insure that all data elements relevant to meaningful use can be easily collected electronically without additional undo burden to our customers, insuring more of our data,

especially what we queried for reporting, is structured and codified. Our challenge in executing this roadmap is the need for finalized certification criteria and test scripts. Although we are encouraged by the ONC's announcement of the temporary certification proposal, we have a very compressed development cycle, given the initial meaningful use states. Our roadmaps can encompass an 18-month cycle.

Without clarity about what and how functions are tested, we foresee challenges upgrading customers to our software ARRA certified version. For example, although a physician will be required to report on relatively few measures, the number for which we must be responsible imposes a significant burden in our development lifecycle, including testing and quality assurance, steps that insure a patient's safety. Many of the proposed measures do not have validated, defined EHR specifications, nor is there yet a readily consumable electronic standard for reporting.

As Dr. Brull notes, we have a strong support team. We educate existing and prospective customers through outreach that includes Webinars, Web site collateral, and outreach to clinician stakeholders active in EHR adoption, like the ACP and AAFP. In addition to this education, we offer a package of practice optimization services to achieve meaningful use, as well as e-learning sessions for customers who do not have the time for instructor assisted training. Thank you again for this opportunity.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Thank you. We'll open the floor for questions.

Aneesh Chopra – White House – CTO
I'm always ready. Do you mind if I go?

Judy Murphy – Aurora Healthcare – Vice President of Applications
No, not at all.

Aneesh Chopra – White House – CTO
Come on now. I want to begin with you. Let me begin, if I can, on the intersection of the standards committee work and the world in which you essentially described a beginning model of, I'm assuming, a quality measure, which was your 2004 hypertension registry work. So you clearly had sort of clinical improvement in mind, as you thought about the role the technology could play to help you get there.

As you are now contemplating all the various pieces, and I was reading your testimony, it was fascinating about just basically sitting in your world, watching all of the members of the ecosystem having to find a way to connect with you. My bottom line is, I'm hopeful that our process is going to help make it easier for you to get the functionality you need to achieve the great things that you're trying to do for your patients. That's sort of the bottom line.

The question I have is, let me ask it in a slightly different way. Are there components of the meaningful use requirements? We heard some this morning about giving the information to the patients, transferring it, and the referrals. Acknowledging that you don't have a statewide HIE, in fact, in many ways it makes it easier to think about how you're going to solve this problem. With whom are you having a conversation? How are you having a conversation about what that will actually mean from your practice's standpoint?

Are there patients that are telling you, this is what we're looking for from you when you do it, and then having someone else crosswalk that to some standard that we could then see as an example? Are there referring physicians or hospitals that are telling you what they want to have from you as the patient transfers into…? How is the ecosystem capturing what's in your head about what you want to see happen? And if there's some clarity around what that is, how are we going to get it?

Jennifer Brull – Family Physician
Five minutes is a very short time to talk, is what I decided, because there was so much more I wanted to tell you.

Aneesh Chopra – White House – CTO
We have time. That's the Q&A part. This is it. Rock and roll, Dr. B. Come on now.

Jennifer Brull – Family Physician
Starting with your sort of clarification about quality work, that's kind of exactly how it started for us. We actually collaborated with our Kansas Department of Health and Environment. That's how we started doing this. And it makes you think about things in such a different light to see population based data as opposed to individual patient. When that person is sitting there in front of you, and you think, diabetic and their blood pressure is 138 over 82. That's pretty good. I don't know. I'm not going to mess up – I'm not going to upset the apple cart.

But when you look at your population, and you say, oh my, gosh. Sixty percent of my diabetics don't have controlled blood pressures. What am I doing wrong? It suddenly makes you look at that patient across from you. You know what? I can get him to 120-something over 70-something. I have that power, and I'm going to do it because I want that to be one less person in my population who is not well controlled.

Electronic health records and health information exchange is just looking at that, not on my practice base level, but on a global level, so if we can say, in the state of Kansas, 60% of our diabetic patients do not have blood pressure controlled, they're not meeting blood pressure goals, that becomes an incentive for every physician, every provider in the state to help our state meet those goals. You go, well, how are we doing against Colorado, or how are we doing against Nebraska because we don't want those Huskers to do better than the Jay Hawks are?

Aneesh Chopra – White House – CTO
Yes.

Jennifer Brull – Family Physician
And I think that that provides that opportunity, so you're right. That was kind of a formative experience. Now that we have an electronic health record, we actually do quality work on multiple indicators, and are adding more as we go. And you do. You go, oh my, gosh. My breast cancer screening rate is only 70%. I thought for sure I was getting all those women in, and then you go after those people, and you start sending them letters. And they come in for their mammograms, and then they come in for consultation because they had an abnormal, and you're improving the care.

I can tell you, as of December 15th, which is the last time – we run the reports quarterly for this current quality project. Ninety-nine percent of the women who were eligible in my practice had their mammogram. Done. That was not true when we started, and you would miss opportunities for care because you weren't looking at that. Yes, quality work is a great seed from which this grows.

Now your specific questions about what are people asking me for. Nobody asks for anything specifically because nobody knows what to ask for. Some consultants have a one-page form that they demand that we fill out because it meets requirements for coding for them. But I have always sent referral letters. With an electronic health record, it takes me, I don't know, probably inside of a minute to generate a

referral letter. It's fantastic. It is so easy, and 10 seconds to print a health summary with an up-to-date medication list, and another 30 seconds to find all the relevant labs and x-rays.

The issue is, we've always sent data, but now we know what we're sending because we have documentation we sent it, and it's much easier to locate and find appropriate things to send. For patients, we have always, I mean, again, our practice is, I think, a little bit nontraditional, but we've always shared lab results with patients. They've always gotten a copy back, so the new thing is, now we're using patient portal, which enables those folks who want to, to log into a secure Web site and get those results instead of sending them in the mail, or to e-mail us securely instead of calling us on the phone. Some people love it, and some people are like, huh? I just want to talk to Tonya, who is my receptionist. You know.

So I don't think it's so much the, what are they asking for. It's the, how am I going to get it, because right now all I've got is I can fax out of my record. I can print it, and mail it to you. But I don't have any way to get to that data zing, you know. And I do have two consultants right now that we e-mail. We put it in a PDF that's password protected. The consent the patients that it's okay to send this through the e-mail, and we e-mail this stuff because it's so much faster, and we've just had to develop a workaround, a consent workaround to do that.

But for the most part, we fax electronic, and we don't print it. We just fax it out of the computer to them because that's the only way they have to receive it is old technology. They don't have a good way for me to give it to them. Does that answer your question?

Aneesh Chopra – White House – CTO

Ultimately, bottling up your story, and then having that be shared with the receivers, so that there starts to be a defined … so we're vague on a patient gets a copy of their record in 48 hours. I'm frankly hoping practices like yours could say, and here's how we're going to do that, and how that is going to work for my needs and collectively, as a nation, we're going to have movement. The market is going to help us define what the best way of doing that is, and that we can adhere to that as we go through our deliberations on standards.

Jennifer Brull – Family Physician

Right. I apologizing for not writing down the name, but somebody down the table said the technology is not the issue, and I agree. You look at the banking industry who have standarized. You can send money all over the world in different currencies, and it works, and that's our money that we're talking about, so if we can standardize technology, it's workflow, and our vendor is a great supportive vendor. But when they came to train us, the biggest issue was not how does the software work. It was, how does that process work in our office? And we literally, at times, mapped processes. This is how a refill happens in the paper world.

How does it happen in the electronic world? And we draw lines and map out because you say, well, how do you do a refill? The trainer goes, there's this refill module. You just click on this button and…. No, no, no. How does it come in? And who handles it? Where does it go in the workflow, and how do we know that nobody forgot to do it? And how does the doctor sign it off and those things?

And so I agree that the technology needs to get decided, and that needs to get out there, but then the process, and I don't know how you push this, is to push the learning collaborative that's already happened on a practice base level in so many places get that information out across platforms so that people can use that workflow that works in their own practice, and not have to reinvent the wheel every time.

Aneesh Chopra – White House – CTO

All to the good. Maybe one final thing, and then we'll turn it to the group. Maybe to the vendors, if I could, one tactical question, and then a broader one about implications of what we've just heard: On the tactical, we've just clarified on CLIA guidance. You've all referenced lab interfaces as a potential anxiety inducing moment. I'm just curious. It's so new. I don't know if you've informed an opinion about whether or not you're going to see an easier path to adoption based on the guidance. It may not be as clear to everybody since it was just released, so just as a threshold, if you have any reaction to it, would certainly welcome that testimony. You seem to have an idea on that, Sidd.

Sidd Shah – eClinicalWorks – Project Director
Yes. I think it's going to help. We've heard from lab companies that CLIA requires us to do all the testing that is needed for practice. And, I think, with the information that came out, maybe there's not testing required for each and every practice. Maybe hub based technologies like we have in place allows us to communicate with every lab vendor, and then practices that connect to our hub can all get results, rather than enabling each practice one by one. So I think it'll help for sure.

Aneesh Chopra – White House – CTO
But not enough to solve the problems that you all have identified.

Sidd Shah – eClinicalWorks – Project Director
But not enough to solve the problem. That's correct.

Aneesh Chopra – White House – CTO
John?

John Blair – Tacanic IPA – President & CEO
Yes. It'll help, and it'll certainly help diffuse some of the confusion out there on all the discussions you have to have with the labs and the different vendors and stuff. But labs, the comment was made, we really need some firm standards. And also, I would ask for a single compendium, a single lab compendium.

Aneesh Chopra – White House – CTO
Brother, man over here to the right is going to fix that problem. Then my final question, I guess, is to some degree, let's all presume that the statement blanket will accept that it's not the technology issue. It's the process … so done. That now is off the table. What I'm trying to understand, maybe more from the vendors, as I do from the providers and the exchange players. When someone starts to articulate what it actually means to achieve these particular criteria, inevitably that will transfer into a development of a module. When you wrote the hypertensive thing in '04, someone had to translate that into a product. That's beyond where we are today with the floor, I guess, is the term of our – in the standards requirement.

What we're hoping for is that the market is going to have this sort of velocity take place where they're going to start to push on the next story and the next story, so that when we get to 2013, and we get to 2015, there'll be more sort of market adoption experience informing how the regulatory process should work on the measures. Because we don't have as many live examples, frankly, John, you and Amanda are probably the furthest along in terms of explaining how the demand side actually wants this to look. You have it, Jen, in your commentary about what you were thinking.

But I'm just trying to understand how do we listen to the demand in the market, so that we're seeing how vendors are reacting. And we can sort of see where the hockey puck is going as opposed to, we're going to show up in six months, and right back where we are. Well, it's USB drivers for the patient, and I don't

trust that it's there, so I'm not going to import it. If we have the same conversation in six months on importing the CCD USB thing, man that's a bummer.

How are you telling us what's happening in the market from a demand side to give us some perspective on how some of those examples will be realized so that, in six months from now when we get to really diving into 2013, we'll have a better view about what's going on? That's a philosophical question. I'll stop there, and ask if there's any feedback on it. Amanda?

Amanda Parsons – NY PCIP – Assistant Commissioner

In about 48 hours from now, 32 of the extension centers are going to be descend upon Washington and take it by storm for 3 days, as we do our extension center kickoff. I think it's going to be really important to think about the extension center group as the group who are going to be in a particular position of power, vis-à-vis their vendor selection. They have got to be thinking about this because, right now, if you are an extension center, I can tell you. Unless you're a group like ours that have been around, you are thinking, oh my, God. I'm going to have to go hire 20 people, and I have got to come up with a sustainable business model.

And so, when you're going to talk to the vendors, that's what you're going to solve for, some joint things that you can share resources and maybe you're going to own their data center piece because that's going to give you a revenue stream. But, for me, those are all the conversations you shouldn't be having with the vendors. You should be having the conversation with your vendors around meaningful use and around the fact that this is the floor. This has to be the floor. This can't be a ceiling, and I think there are a lot of conversations where this is the ceiling, and we've got to figure out how we're going to fall just short of it or just close enough that we're going to inch along.

And I think you've got to figure out where the conversations are. I would definitely put forth the state designated HIEs. I'd put forth the extension centers in there, and figuring out how you leverage forums like this, like I know on the Markle Foundation with the … Markle Foundation connecting for health steering committee, using entities like that who can bring all these different people together and noodle on these topics together because it's not even clear.

I think about the number of times we had to sit down, even when we were designing the blood pressure field. So we wanted to lock it down, right? The vendor said no. This is part of our flexibility. What are you talking about? And the doctors, we had to go in there and figure out what they wanted, and then collectively, we all had to come up with what was the right solution, and it had everything to do with workflows and nothing to do with our individual expertise. I feel like we're going to have to do that with almost every single piece of this. You know, patient reminders, so a vendor is going to develop a functionality. But it's not going to work for the workflow for the providers, and it's not for us going to yield anything positive for public health unless we all get in a room together and figure out how to maximize across all those fronts. Those are the tough conversations to have.

John and I talk a lot, Micky Tripathi, and those are the things that we're trying to do to connect other folks who are like minded because not everybody in this space is about the overarching public health goals, and so you sort of know who is and who isn't.

Aneesh Chopra – White House – CTO

Last question, and then I'll be quiet: Ray, I'm fascinated by your breadth of capabilities that you're going to be enabling through the Axolotl framework. Would you just share with the group a view about, as this process unfolds between sort of integrated packages and modular packages, are you envisioning, looking at the meaningful use requirements and the standards we've adopted, that you'll offer services that are

modular that could be plugged into existing systems so that people can essentially, I mean, I'm just brainstorming, but if Jen has a new vision for how she wants to accomplish something, and there is no statewide HIE, so she doesn't have that service, and her vendor today, it's not in their development roadmap. Will Ray come to the table and say here's a way that I can plug into that framework and achieve that particular vision you have, Jen, for treating your patients in a new and creative way? Can you comment a bit about how you're thinking of those pieces?

Ray Scott – Axolotl Corporation – Cofounder & CEO
Yes. I'll try. We're certainly thinking of modules that will operate at the HIE level to be able to satisfy some of the requirements of meaningful use on behalf of the participants of the HIE. Whether we can create those modules in such a way that they can be deployed without an HIE or in some other vendor's HIE, it's not clear to me yet. We're still looking at that.

We're trying to insure that our platform is open and that we adhere to the standards, but the history that we've observed of adhering to standards has been, you know, the standards have been insufficient or, I guess, not rigorous enough to insure that we can simply drop in software modules without considerable customization. I'd like to think it were possible without, but it hasn't been to date.

Aneesh Chopra – White House – CTO
Just on that point, could you hum a few more bars about what this body could do to help achieve some of those capabilities?

Ray Scott – Axolotl Corporation – Cofounder & CEO
I think tie the standards down crisply in terms of content and transport mechanisms. That's crucial.

Aneesh Chopra – White House – CTO
Very helpful. Judy, I'm done with my….

Judy Murphy – Aurora Healthcare – Vice President of Applications
Thank you. Anne?

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
It's just obvious to me that there's a trend in the conversation that the balance we're trying to achieve between ingenuity or innovation and interoperability, that's a big problem. To go forward not stating standards more tight is in direct opposition to interoperability. How far you can make the balance tilt, I think, is maybe where we need to start talking instead of achieving the 50/50, because the way I look at it is we're going to be creating the next set of rules in a very short timeframe, and our reliance on industry to have already set a path that brings in that innovation, they're just simply still going to be working on phase one when we're wanting them to already have information and examples on phase two.

I'm a technician. I'm not a clinician. And I know you don't get automatic interoperability unless everybody is singing off of the same spec sheet. So I think there is – the concern I have is that there will be a bunch of money spent on all of the connectors that'll have to be put into place individually to allow for the innovation to take place, and that's maybe an unintended consequence of what we're doing. And I would like for us to think about that in our deliberations because it's how long can we go with that balance conversation. It's running out. I present that back to the committee more so than to the assembled testifiers.

Jennifer Brull – Family Physician

A clinician, not a technician, but I will tell you, the biggest, easiest development in my computer life was when they used the USB port to connect anything and everything to my computer. And I know you all were trashing them earlier, but how easy is it for your mouse, your keyboard, your memory stick, your microphone, your camera, your whatever. It all plugs in the same way, and I keep thinking that if the technology could get to the point where it was all plug and play, then….

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
But that doesn't allow for innovation for a USB 3.0.

Jennifer Brull – Family Physician
No, no. You can innovate all you want to with what's on this side, and what's on this side. But the way that they hook together doesn't require an 8-pin serial port or a 16-pin serial port or a male/female hook or … daisy chain in computers. I used to play with this stuff in college, but what we need is we need … you can do whatever you want with your product. And you can do whatever you want with your product, but you have to be able to connect in the same way to each other. I'm sorry. I'm not a technician, but to me that's what makes sense.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
I totally agree with you.

W
I have a question.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Go ahead.

W
My question is, as I listen to each of you talk in the previous panels, is that there's a lot of conversation about HIEs and about the different HIEs that exist in the state, between you, what you bought, Axolotl and so on. But what I haven't heard yet that concerns is HIEs connecting to HIEs because I can tell you, as a provider, we're going to send our data to an HIE, and then we're going to count on you guys, some of you at the table, and some of you that are providers like we are, to get that data somewhere.

Ray, I guess we'll put you in the spotlight here to ask you. What are you thinking? Then as providers, I mean, I want to think that once I send my data out there, then you become the distribution network for me. And if that means that Jen has Medicity or her own or statewide, what are we doing? What's the plan?

Ray Scott – Axolotl Corporation – Cofounder & CEO
I think the NHIN has been particularly helpful here in the standards that have been put forward. In addition, the NHIN Connect has been useful. We have two independent exchanges that are currently actively exchanging data with other exchanges that are not Axolotl exchanges, so that is happening, and I think that's very encouraging that it's happening. One is in California, and the other is in Ohio. And I think that as the NHIN develops, and the services in particular that Doug spoke about this morning become better defined, then we will see better integration and better inter-HIE communication.

W
What drove that development in the situations where there's HIEs talking to HIEs?

Ray Scott – Axolotl Corporation – Cofounder & CEO

I think it wasn't the flow of patient traffic, so I think it's a desire, on behalf of the vendors and some of the HIEs, to insure that that kind of communication is possible, so that we can support and take advantage of the initiatives that are coming out of ONC and the states.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Anybody have a dying comment that we didn't address here?

Aneesh Chopra – White House – CTO
Cris.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Cris, sorry. Dick had something to say. Go ahead.

Dick Thompson – Quality Health Network – Executive Director & CEO
I think the issue on HIE to HIE connection starts to get to become what I call outside the medical neighborhood. We had to do an analysis to say what is the value. What is the patient volume going outside our medical neighborhood, outside our medical trade area? We've been able to just do that, and it was a surprise to us that somewhere close to 10% of our patient population actually ends up in Denver/Salt Lake City. So now we're starting to understand that that can drive a business sustainment model because to say that you can do it, you also have to pay for it long term. How do we do that? We needed to have some volume and scope. So we're confident that with the NHIN standards, we'll be able to communicate with anybody. And we applaud you for that effort, so now we just need to build the business case.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Go ahead, Cris.

Cris Ross – MinuteClinic – CIO
That remark leads well into the question I wanted to ask, to go back to a comment that Amanda made around the extension centers coming to town to begin to focus. John, Dick, and Amanda all have similar kinds of challenges in some regard, but you're developing different kinds of exchanges with different kinds of priorities and different kinds of orders and so on. And it's sort of natural that these local exchanges or local operations would look different if they were started independently.

How much do you think that your exchanges really are different? Do you think that they will harmonize in some fashion over time? And if so, is that a good thing? And, if so, what do you see as the mechanism that would drive one HIE to look more like another HIE?

John Blair – Tacanic IPA – President & CEO
Let me just get a clarification because Amanda made the comment about extension centers, and then you went to HIE. Which one are you asking about?

Cris Ross – MinuteClinic – CIO
I'd ask about either one, but I guess I'm thinking that the extension center might very well be one of the mechanisms. If those grassroots close to practice entities are going to be here together talking to each other, one of the things that you might hope for is that you'd have best practices that emerge in some sort of fashion.

John Blair – Tacanic IPA – President & CEO

Yes. I'll go quickly. I think that there's a tremendous amount of overlap. I think there are great similarities between what Amanda is doing in New York City and what we're doing in the Hudson Valley because it was first to figure out how to get adoption and how to tackle those hurdles. Every hurdle that we've tackled has been followed by another, another, and another, and they're all the same. I would say we're very similar in what we're doing.

Amanda Parsons – NY PCIP – Assistant Commissioner
My response to that question, it depends on how much other funding we have available to sustain our differences because what you'll find is people will regress to the mean when it becomes financially unsustainable to continue to want to do things our way or to solve for just our problem. I think the other thing is when you run out of bandwidth. Frankly, there are a lot of things. We'll sit down in the room and say why are we both calling for this? We're both talking to the same vendor about the same issue, and we're not in a room together, and we're really stretched. So it makes more sense for us to put our heads together as one.

Whether it means that we're going to – whether that's better, I have to say, I really believe in that keep it simple principle. I think it's very hard for vendors. They get pulled in all different directions, and particularly a vendor like eClinicalWorks that has a couple kind of big game programs around. If we are saying things that contradict each other, and then eClinicalWorks is left having to build different builds, I don't think we're helping each other out. I mean, I don't think we're so smart that what we've developed in silos is better than what we would have done if we had just linked up together, given a common goal.

This is what I love about meaningful use. Frankly, what you guys have helped developed is initially what we were all struggling to articulate to vendors. This is why we don't want the functionality because we care what that button does. We want to save lives with that button. That's a really important button. And to figure out how to really put all the focus and attention on what are the right technologies that will allow us to achieve those goals. It's been really helpful to synchronize, so with that in mind, I would say synchronization, as long as it's around the right things, so as long as you agree with me. But as long as you're coming at it from the same place, I think it would be really helpful for the vendors.

Cris Ross – MinuteClinic – CIO
Coming from the right things, what do you think those right things are maybe above and beyond meaningful use or sort of reading between the lines on meaningful use? What things should we emphasize more or less?

Amanda Parsons – NY PCIP – Assistant Commissioner
It's a tough question.

John Blair – Tacanic IPA – President & CEO
In our environment, Dr. West ran the St. Mary's family practice residency for years, and Dr. Brull can comment, but David basically said, when I'm seeing a patient I haven't seen before, I'd like a really solid demographic so we're not confused about which Christianson it might be from the prior panel. I'd like to know specifically and have some kind of reconciled medications list that I have some degree of certainty about. I'd like to know the major problems that the patient has had and currently has, immunizations, allergies. A history of present illness would be quite helpful, and I will accede to the clinicians, but those basic elements seemed to be the things that clinicians tell us they desire.

Dick Thompson – Quality Health Network – Executive Director & CEO
Yes. I would just say, from the implementation standpoint, that implementation really never ends, particularly with the lift that we're trying to do with these providers and that any of these regional

extension centers in these efforts to get these systems used well is going to require ongoing, ongoing implementation efforts beyond support.

Aneesh Chopra – White House – CTO
Judy, last question, please.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Sure.

Aneesh Chopra – White House – CTO
Carol?

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
Yes.

Jennifer Brull – Family Physician
Could I make one comment on what Dick said? In addition to the things he commented on as what's most important, it also has to be trustable because the thing that scares me the most is that no family history of diabetes turns into the patient has diabetes, and that's the thing that, in my, as I include things, I do take records from patients. They e-mail me PDFs, whatever. But at this point it's manual reconciliation with their medical record. If offered a CCR, I'd be happy to look at it on the screen and put that information in your record. But I don't have enough confidence to trust that what's coming in electronically is true.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Go ahead, Carol.

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
Now I have two questions. Let's stay with that issue for a second. This wasn't actually my question, but I want to ask about it. This issue of trusting the information that's coming in has come up in both panels. Right now, the information that comes in, in the paper world, is in the form of a clipboard. And the physician has to sort of sit down and validate and verify whether no family history of diabetes really is strong family history of diabetes and the patient has it. Certainly, that occurs in the paper world as well.

What are the safeguards or the differences, in your opinion, if it's coming in electronically? In other words, it's just information. It's part of the intake. So the first question is, what is it that would address that other than all information, whether it's paper or electronic, has to kind of be viewed in that way, which is, the physician sits down and says, okay. Let me evaluate this. That's part one.

But the second thing is, since patients are giving you PDFs, are you giving them electronic data? I'd be really curious about if any of you have the capacity to provide the patient with an electronic copy today, either because you have a secure download, because you have a portal, or you're just giving them some electronic version. Then I have another question.

Jennifer Brull – Family Physician
I'll answer the second part first, which is yes. We do have the capability, and do provide our patients with electronic records if they ask. And we can provide those as PDFs on a CD. We can do it through the patient portal. We can hand them a paper copy.

Carol Diamond – Markle Foundation – Managing Director Healthcare Program

You do have a patient portal, not necessarily a PHR, but just a secure login where they can download to their desktop for instance?

Jennifer Brull – Family Physician
Yes.

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
Great.

Jennifer Brull – Family Physician
The first part of your question is harder. We trust lab data that comes in through an interface once it's tested. Once the interface is tested, we trust those numbers. We certainly do not walk back to the lab and say, now you said the … was 128. Are you sure that's right? We trust that. What we need to do is we need to build a codified data set of what comes out and goes in, and that, I mean, that's part of this whole moving to ICD-10, which is going to have a bazillion codes, but now that we have a computer, we can handle that. And that specificity is going to help us, not hurt us. And I think people should not be afraid of ICD-10, like they have been, or some other system that allows us to codify down to the patient's left toe got operated on.

That's what we need because a text blog cannot be validated, trusted, or verified, except manually point by point. But if you have a number, it is the number. And just like a lab data piece coming in, once the interface is validated, you're going to trust that number. If the diagnosis and the history and the allergies and the medications are codified into numbers, then once you validated that, you can trust it. For me, that's what I think is trustable.

Amanda Parsons – NY PCIP – Assistant Commissioner
When you're in a paper chart, and you've got information from another provider, it is labeled as such. It is not your documentation. The difference in the EHR is if you're even able to parse these CCDs and throw them in your record, all of a sudden you're the one who diagnosed the diabetes, but you never did a finger stick. Without throwing a wrench in the work in the entire HIE plan, I think it's going to be really important to be able to tag data … diabetes. I wasn't the one who diagnosed it, but I can kind of believe it based on the patient's history, but it's in my record, but not really, like it's tagged as an external thing that I decided to important with the name of the person who diagnosed that. So if ever somebody audits me and says, well, you know, you didn't do the appropriate steps. You say yes because I wasn't the one. I'm the specialist, and that was done by the primary care provider. That was the medication given at the hospital, and it worries me that we're not talking about this tagging and this identification. And that means you can't trust unless you were there.

Aneesh Chopra – White House – CTO
Last comment. We want to make sure we have time for the last panel.

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
Yes. Just, can you download electronically?

Aneesh Chopra – White House – CTO
Anyone offer the electronic download?

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
Or electronic copy.

Aneesh Chopra – White House – CTO
One of the questions that I think Carol is asking is if people can download to paper or PDF. It just reinforces the question of what do they upload. We're right back to the same question. If there's a consistent format you've asked your vendor to enable that has you're publishing out what you're hoping would be codified in, at least in your work. If anyone is doing that, you know, the yin and the yang kind of have to come together, I think, is maybe the question Carol is asking.

Jennifer Brull – Family Physician
I liked the phrase human read, and that's the ways ours goes out, human read.

Aneesh Chopra – White House – CTO
Got it.

Judy Murphy – Aurora Healthcare – Vice President of Applications
With that, I think I'd like to thank all of the panel members. Thank you very much. Rich implementation experiences, and we'll ask the last innovation panel to start making their way to the front, and we'll put the name cards up for them.

Aneesh Chopra – White House – CTO
Let's have some dialog as we go through. Jamie, you're the man of the hour here because the structuring of the vocabulary. I mean, we've now heard this ad nauseam. It's labs, meds, problem lists, allergies. It's the same four. Tell us a little bit about what you're thinking. I didn't hear the transcript of what happened at your hearing last week, but give us some good news about what's going on.

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
In the IFR, you know, the vocabulary standards for all those things were adopted. And so we have those standards for those controlled vocabularies for those items. What we don't have is sort of the publication mechanisms for the subsets of the entire vocabulary that can get implementers started, whether it's through pick lists or the ability to look up the right concept or the right term in that vocabulary, so those the things that we're really focused on in the vocabulary taskforce right now.

I also want to say, back to this issue of trusting data. In my view, there are sort of two factors, and one is the appropriateness of the coding that was done, which was discussed, but there's also trusting that it's from an authentic source, and so the ability to have a digital signature on the intact electronic document, I think, is another aspect that we ought to be thinking about in terms of trusting the importation of data.

M
What I heard in the discussion, and echoing Jamie's comments is that there's a trust in terms of specificity and accuracy that codification will address, but there's a trust in terms of domain of expertise. So labs and radiology interpretations, even though there's blobs of text, that's deferred to an expert in that field. Whereas problems and history or present illness in review of systems, those are more subject, as well as have varying degrees.

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
Right. And as Carol was saying, insuring that the source, the point of origin of that documentation is appropriately tagged with metadata.

M
Yes.

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
And again, getting back to the digital signature is a way of guaranteeing that.

M
Because I think we'll hear from Paul Uhrig and from Surescripts that the medication history that can come from the Surescripts network is codified, and that actually may be more accurate in some respects than the medication list that's passed between providers because you're not sure whether those patients filled those medications. It's not just the codification. It's the whole chain of trust.

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
And just back to some of the previous comments on the NHIN of today, it actually already includes all those things.

Cris Ross – MinuteClinic – CIO
Why don't we begin the fourth and final panel for today? We're a little squeezed on time, and I know that Peter Levin needs to leave right at 3:30, so we'll respect the time. Without going through introductions of the panel, why don't we just from your left to right, and start with Dr. Buck.

Dave Buck – Healthcare for the Homeless Houston – Founder & President
Thank you for having the opportunity to speak. I'm from Healthcare for the Homeless Houston, which is a federally qualified health center in Houston, Texas, that serves homeless through several clinics. We currently are using two EMR products. One is commercially available EMR software, and the other is homegrown. We implemented the commercial EMR in our clinics in 1999, but had to design our own software for our outreach efforts that include street outreach and jail in-reach. Jail in-reach provides continuity of care from the jail to our clinics, and reduces readmission rates by 55%.

Medical street outreach differs significantly from standard office practice and hospital practice. We at Healthcare for the Homeless Houston developed an EMR through an iterative design process involving an informatician, a primary care physician, and several programmers, as well as a team of clinicians who provided feedback at every phase of the project. Deployment of this system is underway in Boston, Pittsburgh, and now in Africa.

There are a myriad of barriers to engaging the underserved in effective care. We developed a model of care to help orient the clinical team to the patient's goals and begin the interaction by focusing on the agenda of the patient. This method is called goal negotiated care. The goals of meaningful use fail to identify the major barriers to care for the most vulnerable of our population, the homeless. Ideal solutions may not apply to this task oriented formula and may ignore entire domains critical to improving health outcomes and continuity of care. Comprehensive services with this population, as essential, should include coordination of treatment from emergency centers to hospitals to jails to street outreach and to clinics. We are either capable of or have already achieved meaningful use in 15 of the 25 categories recently identified.

Goal negotiated care is an improved patient centered model that enhances patient engagement and continuity of care. The current implementation is designed for the homeless and uses custom design software for tablet PCs. In addition, this lightweight EMR has the potential to be used in other populations who have a need for episodic care with limited long-term follow-up such as those in emergency situations and in disasters.

Some of the requirements or standards that helped or hindered innovation largely related to being an FQHC or federally qualified health center working with underserved populations. Customized QA reports

such as UDS requirements relevant to FQHCs are essential. The critical need for overcoming legal barriers to sharing records and record systems cannot be overstated. Ideally, we would have used the same record as the Harris County Indigent Care System, but this was not possible due to county and state regulations. When there was the will to extend the record, a legal consultant identified … Bureau of Primary Healthcare confirmed that it was not appropriate.

Some of the tools, techniques, and approaches key to fostering innovation, an EMR mirroring the flow of care consistent with the patient centered medical home, goal negotiated care used to organize workflow and focus on the unique needs of the street homeless population. Being closely associated with a larger institution, Baylor College of Medicine, was probably the greatest factor in securing software, EMR, hardware, and IT support. If funding could include these host institutions, it could encourage collaboration. Had we not had that host collaboration, we probably would have not had implementation.

EMR and systems must be mapped to the workflow of the clinician to encourage adoption. A Web based cloud solution enabled quick and efficient access to data. Customized dashboards in the system enabled clinicians to view data easily through graphic visualizations, as well as remaining informed and analyzing key performance indicators. The system must be able to address the workflow of the organization.

When other information systems are used by multiple programs, merging and HIE integration becomes critical. Goal negotiated care workflow in street EMR concludes with automated task generation for both clinicians and patients, enabling efficient follow-up of things to do by each individual. Street EMR database and application is designed to have deidentified research interface for data and information mining. Thank you.

Cris Ross – MinuteClinic – CIO

Next, we're going to go to Paul Uhrig, and actually I want swap up the panel a little it. If we could do Paul Uhrig and Tom Morrison, and then scrip over to Will Ross, so we can talk about the three folks who are involved in networks. Then we'll come back to Sherry Reynolds around patient engagement. Paul, please go next.

Paul Uhrig – SureScripts – Chief Privacy Officer, EVP Corporate Development

Thank you, Cris. My name is Paul Uhrig. Thank you for inviting Surescripts to testify today. The adoption of e-prescribing has come a long way. I refer you to our recent national progress report on e-prescribing, but in short, about 18% of eligible prescriptions are being generated and sent electronically today.

You asked what approaches will foster innovation. First, we applaud ONC's multi-lever approach using incentives, early stage funding, on the ground support, and facilitating accelerated growth in exemplary communities to drive meaningful use. We believe that there are a few core components to innovation in this area. First, there needs to be functional modularity, which is best leveraged when it's tied together through open, standards based interoperability, which is furthered by increased data liquidity on the key data sets in the setting of trust that insures privacy and security. We believe the tools of the future combine both design, usability on the front end, and clinical decision support on the backend. So we think meaningful use would be best realized if these components: modularity, interoperability, data liquidity, usability, and decision support are clearly encouraged and fostered.

You asked whether there are standards that help or hinder innovation or adoption. As discussed earlier, standards are critical. One challenge that I would point out at this time is the time that exists between when a standard is adopted by the applicable standards setting organization and the point at which it is adopted by the government. Using e-prescribing as an example, the current standard, NCPDP 8.1, was

adopted by the government in April of 2008. The industry already wants to move to NCPDP 10.6, and is ready to do so. But that standard has yet to be adopted by the government. 10.6 was adopted by NCPDP in October 2008. NCVHS recommended adoption in July of 2009, and we await with eagerness a rule from CMS to adopt it, but that has not happened yet. I don't mention this to cast blame. Everybody has processes they need to go through, but this time lag, I think, frustrates everyone and delays the implementation of new standards that represent innovation and progress.

You asked that we describe our organizations approach to assist others achieve meaningful use. First, we'll be doing everything we have been in the past to drive success. Programs that promote quality, drive implementation, provide education, encourage collaboration, and passing along the benefits of efficiency through lower prices.

Second, we're going to respond to the call for secure data liquidity by enabling patient centric medication history. Currently to providers and hospitals for medication reconciliation, and now we are engaging with HIEs to facilitate the delivery of prescription history to them. Third, we're applying our network to other use cases such as the continuity of care record.

Finally, last week, we announced the collaboration between Quest and Surescripts to pioneer the formation of an integrated service to make laboratory and prescription information broadly and easily accessible to physicians. We intend to create a neutral, low cost network to provide access to lab and prescription information at the point of care through EMRs, EHRs, and HIEs.

There are, however, significant challenges related to workflow and change management that are experienced by physician offices and, to some extent, pharmacy staff when implementing e-prescribing systems. I'd like to take a moment and offer some best practices. Although I frame these in the e-prescribing environment, they have applicability to the larger EHR adoption landscape.

First, practices need to set a clear vision and objectives. Prescribers should implement and use all the functionality available to them. Physicians and their staff should thoughtfully consider workflow changes. There should be an e-prescribing champion in the practice. Training, training, and training is critical. It's important to communicate with patients about the technology and what it means to them.

Finally, it's critical that users report support cases to their technology vendors so that issues can be identified and resolved in a very timely manner. We've provided to the workgroup materials from Surescripts and the Center for Improving Medication Management that you can certainly share with the public. We believe this environment will encourage an open platform of standards based collaboration, enabling patient centric health data liquidity passing through an authenticated trust highway, in the end providing the right data to the right care provider at the right time. Thank you.

Cris Ross – MinuteClinic – CIO
Thank you, Paul. Tom Morrison from NaviNet.

Tom Morrison – NaviNet – Chief Strategy Officer
My name is Tom Morrison, and I have to admit, I've been a bit of an ONC groupie for the last year. I've been sitting in the back listening to everything that's been said. And I have to say, it's a lot more fun to be up here, so I very much appreciate the opportunity to testify. And I also have to say that I've been in healthcare IT for 25 years, and I've seen more progress in the last year than I've seen ever before. I mean, there's so much energy and so much brainpower that's being applied to this space right now, and it's very, very exciting.

What I'm going to focus on in my testimony is really talking a bit about a framework for innovation, and it's from the perspective of an entrepreneur, which has really been my role in HIT. You'll find very quickly that I am a huge fan of NHIN Direct, and I think NHIN direct is the start of something that's very exciting that can make a very significant contribution to health information exchange and to innovation.

What I'd like to suggest is that in the conversations that I've participated in, the conversations that I've had with a number of you, a lot of the energy so far has been focused on policy, and it's been focused on technology. There has not been as much conversation about the adoption requirements from sort of a business and a market development perspective, the kind of perspective that an entrepreneur would bring to this space. Again, that's kind of where I want to focus my comments.

The issues around market development are things like what's the value proposition. What's the business case? How do we get to critical mass that we could actually demonstrate that business case, demonstrate that value proposition, get users to adopt? So again, there's a lot of material that I put in, and if you're interested, please read through it. But the concept is that there are a set of market adoption requirements that really need to be considered, just like we're considering technical standards, and just like we're considering policy issues.

If I could, if I could get you to turn to page five of my testimony, which is a matrix that lays out two dimensions. One dimension is the market adoption requirements that I just mentioned. The second is methods of exchange, and so as NHIN, as Doug talked about earlier, NHIN Direct is about facilitating multiple forms of exchange. The message that I'd like to get across here is that, as you compare the market adoption requirements with these various methods of exchange, you'll see there are significant differences in the business climate for adoption.

For example, the value proposition for a RHIO is very different than a value proposition associated with one physician transferring information to another physician. What I would suggest that as you look at the quality metrics that are really a great example where I think we need to be more granular in our thinking about how we take these things to market. For example, when you look at the quality metrics, about half of the quality metrics, outcomes will only improve if the patient changes their behavior. It's great to record BMI. It's great to record that a patient has been told to stop smoking. But at the end of the day, it's really about behavior change, so how do we take those quality metrics, bring them to market in a way that can facilitate innovation around patient behavior change.

One way to do that is by facilitating exchange that's based around the patient, so a very patient centric form of exchange. A great example of that in the conversation earlier today was the National Cancer Institute. Here's an example of an organization that is taking a patient centric focus, an individual centric focus, building a registry, and now the question is, how do you get that distributed into the marketplace?

One of the challenges, particularly with those kinds of specialized patient, that kind of specialized patient information is if you have to rely on every EMR vendor to write the application to support those situations, the complexity becomes overwhelming. So as we start looking forward towards personalized medicine, there's going to be more and more complexity around clinical decision support and that patient centric perspective. How in our sort of NHIN Direct infrastructure do we start to facilitate that?

When we start talking about payment reform, another place where we think we've, as an industry, we've all agreed we need reform. Very challenging, right? Much easier if we can make that centered architecturally around a patient because if you can provide payment reform around an individual patient for closing a gap in care, for example, that's very useful to the system, and that can actually happen very quickly.

Just a couple more comments about NaviNet: NaviNet, like Surescripts, is probably the largest. We're probably the largest two provider networks in the country. We are in the marketplace today delivering things like PHRs and care alerts, and to one of your earlier points, nobody wants to go search for those things. What we've done is established a platform that does eligibility and benefit checking, but it does it in a way that when we do an eligibility and benefit check, we will ping our partners and say, hey, you've got a care alert. Hey, you've got a PHR, and actually deliver it to the provider office as part of a benefits workflow, so we don't have to establish a new workflow. So that if we can create a marketplace with many vendors and organizations that are creating patient centric information like the National Cancer Institute, in an NHIN Direct like platform that goes into an existing workflow, allowing them the flexibility to deliver content exactly the way they need to because of the nature of their particular patients of focus, we can take a great step forward. Thank you.

Cris Ross – MinuteClinic – CIO
Terrific. Will Ross?

Will Ross – Redwood MedNet – Project Manager
Hello. My name is Will Ross. Good afternoon. Thank you very much, Chair Chopra, and the members of the committee. I'm the project manager for Redwood MedNet, a rural health information exchange located north of San Francisco, California. My goal today is to discuss … adoption of interoperable health data services, as a reality check that will trump the health IT innovation cycle. In particular, I'm going to focus on what I see as two breakthrough opportunities and two useful misdirection's that are also breakthrough opportunities, so a total of four.

Redwood MedNet is a small and agile HIE. Over the short lifecycle of the NHIN, we have been able to simplify various cumbersome specifications that have been suggested for national interoperability. We've leveraged open source software tools to deploy operational exchange services, and we've demonstrated how these can be put into practice. Redwood MedNet has been in production delivering clinical data to local providers since 2008.

The first take away from my remarks is that the IHE legacy that haunts the current NHIN specifications is not too complex for small shops like Redwood MedNet to deploy and that Redwood MedNet shows that small sites can succeed at interoperability, as it's currently defined. However, just because a small HIE can build functional federal gateways and prototypes does not mean that the legacy IHE topology is scaleable or likely to lead to broad adoption and utilization.

As an IT operations manager, I do not use IHE services within our network, but rather only as a gateway service to bridge the formal gap between our work and other HIEs. We've demonstrated this capability often most recently in the FHA booth at HIMSS where we showed health data exchange among three non-federal HIEs. On the second page, there's a little diagram of that. The second takeaway that I want you to have here is that despite being deployable, the HIE protocols, as we have known them, are over-designed, and even so, they can still be useful for gateway services.

…innovation, number one is Connect, the open source gateway software. Connect optimizes the cumbersome IHE protocol stack within an agile gateway tool. Dozens of private sector open source programmers are now contributing to the Connect roadmap. The release of Connect 3.0 later this year will offer further opportunities for breakthrough innovation, particularly with the XMPP messaging tools. The community ramp up towards this disruptive innovation from Connect is palpable. It's simple and an inexpensive platform to roll out, and its agility as a change agent and its potential as a breakthrough was only partially captured by the 40 individual demonstrations at HIMSS.

The third takeaway is that despite their deep and thorough development cycle, the legacy HIE protocols are insufficiently agile, as they stand for local deployments. But the fourth takeaway is that Connect obviates that. Connect is IHE done right. It's compact. It's agile. It's adaptable, and you can install it and roll it out.

Now useful misdirection number one is Wes Rishel's brilliant blog postings on simple interop. Although useful as a topic, some of the parts of interop are just too simple. I've detailed a little illustration here that shows how IHE and HITSP are too cumbersome, and simple interop are too simple, but Connect is operating in the middle and is providing some real traction for innovation there. The fifth takeaway here is that simple interop may be too simple, but its timely discussion usefully forces us to confront the lack of adoption of the cumbersome NHIN specifications.

Useful misdirection number two is NHIN Direct. I'm excited about the potential of NHIN Direct, but I think it's missing a little bit of the narrative history. For example, a lot of what NHIN Direct is describing as new is what we've been doing for years. I've actually been entering data on the wiki to try to bring that up to speed. I've already got about 16 entries logged into the wiki. The sixth takeaway is that the NHIN Direct effort, while based on a mistaken assumption, will allow some tremendous traction for us to move forward.

Finally, disruptive innovation number two, it will come as no surprise to this workgroup that EHR adoption remains weak. We'll have to wait and see if the REC strategy can successfully move forward more small providers in EHR interoperability. But, for the moment, the pain and misery of EHR adoption is a familiar theme to all small healthcare practices. A large part of this misery is due to the cumbersome and unforgiving nature of enterprise EHR software packages, so the seventh and final takeaway here is that certified EHR modules in the interim final rule are a brilliant breakthrough strategy that could lead to some substantial new innovation in the EHR space, making things more modular and more interoperable. Thanks for the opportunity to present these ideas.

Cris Ross – MinuteClinic – CIO
Thank you. Now back to Sherry Reynolds.

Sherry Reynolds – Alliance 4 Health – Executive Director
My dad told me that Gettysburg Address is only about 45 seconds long, and so 5 minutes, he was really intrigued to see what I could possibly have to say.

First, I would just really want to thank you for inviting me to participate in this really important conversation, and I do believe it's a conversation in the same way that healthcare starts with a conversation between providers and patients. You'll notice my remarks are not in your packet to read because it's always challenging for consumers to get their records into their EHR, so I thought we would try and duplicate that here for you as well.

My remarks are going to focus on two areas of consumers in health IT, how consumers can drive implementation for the traditional big vendor healthcare IT vendors and, two, more importantly, get ready because consumers are about to become the game changing catalysts in a more modular approach to health IT.

My name is Sherry Reynolds, although I'm also known as Cascadia on Twitter, to all my Twitter friends out there, and a quick disclaimer. Even though … Group Health, I'm not speaking here today on behalf of a company, an organization, a vendor, or even myself, but the often silent, but empowered patients – it

chokes me up – and the growing outspoken healthcare consumers. Before I begin, however, I want to clarify two somewhat radical assumptions about consumer engagement and being a tipping point in health IT implementations.

I don't actually believe that patients or consumers should be an outcome or even a goal of meaningful use, ARRA, or even health IT. That might sound somewhat surprising since I'm sort of known as being a nationally recognized consumer health IT advocate, and I like to think I'm a part-time EMR implementation expert as well. But like most of us, however, who have worked at Group Health or in the AIDS community in the late '80s, we believe that patient centered design and care should be a core value and not an outcome of both healthcare and healthcare IT. In fact, this core value is what all of the other goals should hang on.

In the future, much of the change that we're looking for will depend upon informed, engaged consumers. And health IT is simply a tool that furthers that communication between provider and patient, between patient and family, patient and community. We aren't merely recipients of data. We're part of an ongoing conversation and literally co-creators of the information that we need in order to bring about change in our own health, the health of our healthcare systems, as well as our communities.

The second radical assumption is I don't believe that the stimulus funds should be a goal of ARRA for any provider or healthcare system, or you simply end up with a really expensive electric pencil. The money is a project resource and not the goal, and we constantly need to remind ourselves of what the real goal is. The real goal is high quality, efficient, patient centered care. We often forget that final factor, the patient.

The patient is a critical player in this project, and any … project manager will tell you that if you leave out a key stakeholder in the beginning of your project, disaster is going to come down the line. You cannot add them after the fact. This forum, however, is on innovation in EHR implementations, and as much as I would love to digress into the philosophy and the value system, or share stories about mobile health in Africa being reverse engineered into homeless used in Seattle, I'm going to give you a real example.

The real example is Group Health. In 2003, Group Health implemented an EHR, and the innovation and somewhat radical concept that we use is we put the patient's needs first. In fact, we gave our patients access. Five hundred and eighty thousand people belong to group health, access … for the providers by up to a year using an open data model. Even though the vendor told us, and I talked to him today, he said he didn't actually say it was impossible. They just didn't recommend it. We actually started with the patients first because that's the core value of our healthcare system in that region.

This decision, you might want to know, did it work? What were the results? It was truly groundbreaking, not only in terms of quality, effective patient centered care, but we have the highest rates of adoption of any EHR in the country. Patients forget about half of what you tell them in the doctor's office, so when they walk out the door in their hand is an after-visit summary with links so that when they get home, they can look up customized, targeted health information for their situation.

Recently, the direct result of having this comprehensive, patient centered EHR, statewide, they are implementing the medical home model. They also were able to cut Medicare rates for their Medicare population by 77%. I don't think there's anyplace else in the country where you're hearing people not only cut Medicare rates, but are asking people who have Medicare to join the system because we can provide higher quality, more cost effective care.

Most vendors, including Epic, NexGen, eClinicalWorks already have a pipe to consumers built into their systems, so it's not a technical challenge to send data to the patients. But it takes a change in values by

most providers to open their medical data to the consumers to improve the outcomes, safety, and quality. I see I'm short on time, so there's no need with this strategy of transparency to request data, wait for the 48 hours, bring your thumb drive into the office. Would you stay with a bank that asked you to do the same thing?

As other speakers mentioned earlier today, much of an EHR implementation is change management and workflow process. But without that core value of patient centered care, no one ever considers the patient's workflow when we design the system. I often wonder if we're building a car without a steering wheel.

We know how to implement optimized EHRs, and I have tons of friends how are consultants. I'm not going to put them out of work. Both Group Health and I would be willing to, of course, share best practices with the larger community. But isn't a toolkit, a roadmap, or even a standard that people really need, as much as a commitment to put the patients' needs first. Use transparency, openness, everything that we believe in, in Government 2.0, and House 2.0, and you'll have amazing outcomes. Providers need to hear about the shared stories of success in order to bring about this change and refocus on what is best for the patient while being aware of the very real business challenges.

In order to encourage innovation, we need all stakeholders at the table—consumers, the private sector, government, and most importantly, providers—since, in the end, all healthcare starts and ends with a simple conversation between two people. Health IT is an amazing tool that allows that conversation to happen outside of the walls of your provider's office in places, times, and ways that appeal to both patients and providers. If you really want to encourage health IT and use, the key is shifting your focus back to that almost sacred conversation that happens between a patient and a provider. And remember why most people go into healthcare is to heal. Both patients and providers are motivated by a sense of purpose and mastery, and not the carrot and stick approach that we often use under the current system. Thank you for your time.

Cris Ross – MinuteClinic – CIO
Peter Levin.

Peter Levin – Department of Veterans Affairs – CTO
Good afternoon, everyone. Thank you very much for including me in your session this afternoon. My name is Peter Levine. I'm the chief technology officer and senior advisor to the Secretary in the United States Department of Veterans Affairs. I have the pleasure of representing the VA here to you today, the largest, integrated, healthcare delivery system in the country. We believe that the quality of our care, the transparency of our process, and the accountability that we hold to our veterans and to the taxpayers is catalyzed and facilitated by our electronic medical record platform called VistA.

There's a reason why VA provides the best care anywhere. It's because VistA, our world leading EMR, is the best platform everywhere. This is something that we can all be proud of. It transcends politics because veteran care is a moral obligation. It has established the benchmark of use, utility, and impact.

I had the privilege of assuming my responsibilities not quite one year ago, and my job was to take something good, something groundbreaking and unique, and make it better. I'm going to spend the next, almost four minutes, describing how VA intends to leverage the NHIN to create a model of the next generation of Web enabled electronic health platforms. Here's the deal. VistA is tens of millions of lines of MUMPS code. The data, the business rules, and the presentation are all inextricably linked together in a kaleidoscope of software. If you don't believe me, just talk to the people who are working on the BHIE this afternoon.

The current architecture of VistA limits its extensibility, its scalability, and its maintainability. This is best achieved by modularity, and that's what we're going to talk about now. In essence, I can summarize my entire talk, ten slides, in one sentence. We're going to create an air gap. We're going to segregate the presentation layer of VistA and attach it to the NHIN. If you would indulge me, and I think you have the slide someplace in your package. You have the slides in front of you, so slide two, please.

Now that I've bragged on VistA, let me tell you all what's wrong with it, and there's a lot. VistA is maintained as an extent native application on tens of thousands of computers. If you want to make a change, you have to deploy it to tens of thousands of computers. It's very, very difficult to respond to regulatory changes or the many enhancements not just by the 270,000—Linda, help me—people who work for the VHA, but the many tens of thousands of people who contribute software to VistA either on a contract basis or volunteer. And it's also very difficult to find knowledgably staff, people who we would like to hire to maintain a 20-plus-year-old technology.

Perhaps the most important challenge that we face today is that interchange and interconnectivity with our partners, for example, Kaiser Permanente that we announced a couple of months ago, or the DoD, which President Obama mandated us to interoperate with last year, is extremely difficult. Effectively, what we're trying to do, and what we see the NHIN as accomplishing, is replace a tin can on a string with an actual cell phone system.

The user interface on VistA is arguably the best that exists in any electronic medical record, and it's still inadequate. It's difficult to use, difficult to learn, and the information is not as intuitive as it could be. Now it's easy for me to come in, after 15 years of hard work on VistA, and tell you all the things that are wrong with it, and there are a lot of things that are wrong with it.

I remind you that it's the best platform everywhere, and the people who wrote this wrote this with the available technologies. The problem is that they haven't had the opportunity to upgrade it. That's where I come in. It requires extensive user training, and I've already mentioned that the programming environment is outdated and difficult to maintain.

So what would you do if you could start from scratch, and this is the magnificent opportunity that the Secretary has offered me? We would start with a system that can be easily understood by a variety of systems. We've learned a lot in the last 15 years, not just about how we design electronic medical records, but also how we design computer applications that are usable by a broad variety of consumers and service providers. How many of you were using Yahoo 15 years ago.

We would like a platform that can scale with our veteran population and that can accommodate, a modular component based, perhaps even open source like framework, multiple development teams able to qualify, certify, and install their application into the backbone platform. We would like to have a high level of availability and reliability. In weak self-defense, I'd like for you to know that I made this slide about a month ago, and that was before the BHIE challenge that we face today. I think the point is made. And we would like to be able to integrate our electronic medical records from multiple sources. I think that my colleagues here have made that point well.

Let me introduce you please to the next generation of VistA. This falls underneath the broad umbrella of something that we've notionally named Aviva. VistA is an important component of Aviva, and I wouldn't be surprised if it ultimately subsumes it. We would like to be able to deploy our qualified, automatically regressed, certified code in one location instead of 150,000. We'd like to be able to fix our bugs more easily, accelerate our release cycle, and again, perhaps the most important benefit, not just of a

refactored, modularized, componentized VistA, but the way that we plug into the interoperability backbone between VistA and other EMRs is to create a modular platform.

In order to be able to interoperate, we have to be able to exchange data. As a spokesperson this afternoon from the VA, I want to be very clear that we, under no circumstances – under no circumstances do we want to prescribe what that standard should be. By the way, if you're using it, we probably have it. Nor do we necessarily want you to change the graphic user interface of the presentation layer. In fact, you should even have your own business rules.

All we really care about at the VA, and I would argue all that we should really care about as an HIE community is data interoperability, or at least data interoperability first. If we can exchange business rules later, that's great. And if we can actually have some kind of convergence synthesis of the user layer, that's also great. But right now, I am focused on data. If we can do that, we'll be able to reduce our training time significantly and be able to interoperate more effectively.

This new platform, which I'll show you a picture of in a second, is designed to be scalable, modular, efficient, and it's current. Perhaps currency is the most important of those four categories because currency is what is limiting us right now to be able to fix bugs quickly, to accelerate our release cycle, and to be able to plug into other components.

Obviously everything that we want to do is standards based. We've already mentioned the NHIN. We're complying with HL-7, DICOM, and SNOMED interoperability exchanges and data gram formatting. And, of course, the big advantage of doing it this way is you fixed it once, you fixed it everywhere.

The punch line is the Aviva roadmap. You might be familiar with other electronic medical record platforms that exist inside the federal sector. In the gangster language that my son speaks so readily, and to protect the innocent, I've changed the names on the left-hand side. The A's are the same, but the stuff in the middle is a little different. And the idea is that we should be able to come up through the NHIN, through a Web server that interoperates with our version of a resource broker, which we call Meadows. Meadows effectively is a switch that is the layer above VistA that allows us to answer questions like who is Peter. What medicines is he taking? And how is his throat doing today?

Apollo is a user interface also developed by the VA that today sits on top of Meadows, but in fact could sit on top of a Web server. So you can see that this new architecture, this frankly very simple architecture, this air gapped architecture where the gap actually exists between the presentation layer of Apollo and the broker that is Meadows, allows very simple interoperability between Aviva/Apollo/Meadows/VistA-like system, and any other electronic medical record system that you can imagine, including ones that might be owned by our partner agencies across the river.

If you buy all this, if you buy the fact that you can start segmenting the kaleidoscope into a presentation layer that allows you to protect the user from changes that take place behind the curtain. If you buy the fact that that protection affords you the opportunity of starting to refactor and modularize your business rules and data in ways, again, that the service provider will be agnostic to, you can start to see the beginning of how we, at the VA, can take VistA, this 15 million lines of MUMPS, and turn it into something that we can all benefit from and use, and how we'll use the NHIN to interoperate with our partner agencies and with the private sector. Thank you very much for your attention and time today.

Cris Ross – MinuteClinic – CIO

Great. Thank you very much. Obviously a wide divergence of different areas of innovation and development in this space. Aneesh, do you want to start the questioning?

Aneesh Chopra – White House – CTO
I know, I have so many questions. I feel so guilty. All of you did an amazing job, and I greatly appreciate the feedback. If I could try to go one layer of abstraction down into the work we're doing to get a little bit of feedback specifically about whether we're helpful, hurtful, how we make changes, and so forth. David, if I could start with you, this prison in-sourcing thing is pretty interesting. I hadn't quite figured out exactly what that means from a data and a standards question. If you don't mind maybe helping us understand. I'm assuming some of the prisons have adopted their version of an electronic medical record. I know we, in Virginia, prior to my job here, had begun that investment. Are you using standards based exchange to gather data from the prisons? Give me more meat on the bone as to what it is that's happening on the ground and where we could be helpful in connecting the dots.

Dave Buck – Healthcare for the Homeless Houston – Founder & President
I'd like to tell you the context of why this is important besides the obvious. The study done two years ago showed that people released from jail that were HIV positive, 100% on their meds at the time of discharge, 10%—Texas was the worst—were on their meds three months after discharge. The psychiatric meds is not too dissimilar, so that's the context. There is a record in the jail system that we now, because of our MOU, can get that data from them, but it's the two electronic medical records do not speak to one another. And so, if a patient of ours, for a longstanding, goes into jail, they don't actually get that data, but we can get it. It's a unidirectional data. That's true so much throughout the entire system. We have a county hospital district that sees all – all of our patients are eligible for their care, but we cannot share that information.

Aneesh Chopra – White House – CTO
Again, not to put too fine a point on it, I'm assuming what I'm hearing you say is that you basically built a one-way interface with whoever the county system is, but you don't know if you're getting a copy of a CCD or a particular summary standard that describes how you grab the information out.

Dave Buck – Healthcare for the Homeless Houston – Founder & President
It's the old fashioned way. Even though both have EMRs now, when we obtain data from our county indigent care system, at best, we actually go online because many of us are cross-authorized to use the data. So we'll tap using our – we're not actually supposed to, but we get that data because otherwise the patient care is compromised. And we've gone to great lengths to try to come under their umbrella, and have been told by the Bureau of Primary Healthcare, we cannot do that. That would violate the rule that there has to be one owner of the data at all times. Even though there's one set of patients that are in all of these systems—the ERs, the hospitals, the jails, the psychiatric institutions, and our clinics and on the street—none of that data is shared.

These, you think, well, this is a small percentage of people, roughly three million in the U.S. The problem is, these are the frequent flyers. These are the most costly of our system. And I think that the challenge isn't technologically. It's a legal challenge.

Aneesh Chopra – White House – CTO
Let me make a broad question for the rest, and then maybe I'll leave that, Cris, to the rest of the brain power in the room, and I'll be quiet. A lot of this discussion about who's designing the requirements for the future, are you all thinking of this in your head? Do you have an early group of providers who give you the requirements of the future when Anne describes this notion that we have of balance between enabling innovation and providing some predictable standards?

Are there folks helping you define that path to the future that's above the floor that we've laid out in the 2011 that will give some view that in 6, 9, 12 months, more capability will be available that will help to deliver a lot of the things that you've all said in testimony as part of your vision you're doing? Just give us a little bit more, if you don't mind, on what's actually happening on the ground today. Are you seeing that group of early adopters helping to frame the requirements of the future that go beyond where we are that could inform 2013, or is that still a work in progress, a ways away? Anybody? Tom?

Tom Morrison – NaviNet – Chief Strategy Officer

One of the things that I've been working on is, I've been participating with a clinical group or a collaborative, and chairing a committee there on facilitating some of the interoperability between the various modules. I think one of the challenges in the industry has been, and again, it's part of the reason why I think NHIN Direct is so important is that the market has been very centered on standard database exchange as the vehicle for all information exchange. And there are some real challenges there. And I think it's got to be a bit more of a hybrid.

If you take the VA as an example, there are going to be specialized conditions that the VA is going to put into VistA that aren't going to apply anywhere else, so they're willing to make investments in their capabilities to support their particular patients, if you will. And so, expecting every EMR vendor to create the support in their applications against that standard data, first, you don't have the standard data for specialized conditions. Secondly, the investment from the EMR vendors in building it is problematic.

I think part of the innovation that we think is important in the marketplace is to think about this a little bit more. It's time we stopped talking about the miracle of the ATM machine in healthcare and start figuring out how to leverage the 90 million independent Web sites that are creating content and value in every other industry.

And so, the question is, it's not one way or the other. The question is, how do we find that balance to say what can we do right now. An example, let's talk about payment reform, and we're trying to drive some of this in the marketplace right now. First thing on the meaningful use quality metrics was hypertensive patients who aren't taking their blood pressure medication.

Well, that's a great opportunity for innovation because if you can provide a program to docs to say, check eligibility and benefit. Along comes a notice that says this patient is hypertensive. Not taking their blood pressure medication. Oh, by the way, if you can get them to change their behavior, we'll pay you $100 or $250, or $500, whatever it is. Many of the quality metrics can be targeted in a much more direct way so that we can move forward in terms of improving outcomes in a couple of years instead of in 2017.

Sherry Reynolds – Alliance 4 Health – Executive Director

Aneesh, back to your original question: In Washington State, we have had a health information infrastructure advisory board, the HIIAB, for the last couple of years. The key takeaway or the key lesson that we've learned is that it's the governance agreements and the working cooperatively, even having data sharing agreements and not having to duplicate those over and over again add real value. We did three health record banking demonstration projects, for example, in partnership with Google Health and Microsoft HealthVault. And so what's really been, not a standard, but a way of operating collaboratively together in an open, transparent way is a lesson learned, I think, for other areas, and we're seeing that happen across the country as well.

Peter Levin – Department of Veterans Affairs – CTO

I'd also like a shot at this. First of all, perhaps a trivial question of nomenclature, but I want to be clear that the VA is not intending to in any way dictate a standard database exchange. That may not be what

you meant, but it is what I heard. And, in fact, we do want to help facilitate and catalyze database formats. You tell us what you want, and that's what we're going to put out. We're in the luxurious position of having it already. It's almost a question of just fitting whatever key we have on our ring to the lock that the rest of us will decide together.

With regards to specialized formats, again, from a database perspective, that's a superset of all the things that you might be asking for. Let's agree. This is how we're going to format names. This is how we're going to format address. This is how we're going to format meds. This is how we're going to format diseases. And we're going to get 95% of what we want really quickly, and let's deal with the exceptions later. We already have the exceptions, I promise you, and we're not going to impose them on anybody. But we have them, and you can use them if you want.

With regards to Aneesh's question about use models, let me remind us all, we've got 100,000 docs telling me every day what they want in VistA. In fact, we tried recently to structure and, under Aneesh's leadership, was successful in running our second innovation competition. We just closed off the Web site a couple of days ago. We had 50,000 participants in this structured question of effectively what do you want the use model to be. It wasn't quite so highfalutin as that. They were bucketized. Where do you see transparency? Where do you see changes in VistA? Where do you see things that we haven't asked you about? But there's no shyness in the VA, no introversion in the VA that would in any way prohibit them telling us what it is that they want to see.

Last, but not least, this is a little bit tongue and cheek, but it ends up being so far true that perhaps the best outcome of the NHIN experience for us has been governance, has been the DURSA. You can't imagine the fights that we're having with our federal partners, with our private sector partners, and with ourselves over where the comma goes and what the response time should be, and what do we mean when we say tell me. If I leave you with any message today, I hope you will get the point that we're trying to be as forward leaning as we possibly can without leaning on you.

We want to have a dialog. We want that dialog to be constructive and positive. We probably already have what it is that you need. We need to make sure that we're speaking the same vocabulary, and as soon as we have clear specifications, we'll build to that spec, I promise you.

Aneesh Chopra – White House – CTO
All right, Cris, let's….

Cris Ross – MinuteClinic – CIO
Let's open it up for further questions. Let me start with one, looking for others, which would be especially to Will, Tom, and Paul. After our second panel today, I think there was a concern that there was potentially some risk, that especially large organizations might engage in meaningful use as a way to check off the box to say I can produce data, but didn't necessarily have an intent to consume data because it's not required as part of meaningful use.

The three of you are engaged in enterprises that are in some ways betting on the calm, that people are going to want to consume data in a variety of different fashions. What do you see happening in terms of innovative developments in the market, because I think the presumption is, we have to have a willing consumer and an eager producer in order to make a market on data here? What do you see coming ahead?

Will Ross – Redwood MedNet – Project Manager

This is Will. I'll start with the elephant in the room here is that adoption remains anemic. We've got a change in the curve. We're doing better, but in my neighborhood, we're looking at a third of a third. In other words, a third of the practices are talking about using EHR, and a third of those that have it are actually using it in a meaningful use. It's 10% basically.

And what we're trying to leverage from this ARRA investment is moving in the direction of 50%. It's really great that in some of the urban areas, we're looking at 40% or 50% or 60%, but in my neighborhood, we're not. We're trying to get past 10% right now, and I think that's probably true for a lot of low resource areas that have limited IT staffing. And so I was somewhat concerned about the second panel this morning in terms of large enterprise vendors looking at how well they're doing, how the glass is half full, and the trump card here, I believe, the reality check here is that until users, and I'm talking about all of the clinicians, actually have a reason to adopt.

It's going to remain an uphill struggle. We're going to continue pushing uphill, and large enterprises have an advantage because of institutional IT management capabilities, but large enterprises don't deliver all the healthcare. So we've got this long tail or this big cohort of providers for whom there is no compelling reason to adopt yet. While I want to believe that the innovation we put on the table is enough to make that happen, I think we're still – the point right now is to continue testing, continue experimenting, continue putting options together, but not to assume that we've already got that magic bullet.

I'd like to think that we're going to discover our way out of this. And, in particular, the image that I use for the current state of the NHIN is that we're in the stage of the Internet where Prodigy can't talk to CompuServe, and we're not at the point where – now the release of the Connect—

Aneesh Chopra – White House – CTO
Will, you're the man.

Will Ross – Redwood MedNet – Project Manager
We're at host.txt. We're at white list. We don't have DNS, and the release of the Connect gateway could be, and the standing up of NHIN Direct, could be the moment that mosaic was introduced. I don't know. We're still looking to see if that's got enough traction for us. But we have some invention to go to really take this thing and make it relevant at the level of the users.

Tom Morrison – NaviNet – Chief Strategy Officer
I think one of the things that we've got to do, and we've already started down this path, is that we need to sort of enforce this patient engagement component from a provider perspective. Getting the record. Getting the information out of a provider office in an electronic format is a real enabler for a whole set of consumer aggregators.

Right now it's not possible for, you know, it's very difficult for a vendor like Microsoft or others to be able to get access to the data to provide that consumer service. Particularly for chronic patients, for chronic patients who are motivated, have complex health issues, providing them with a vehicle to get their data is a starting point, not that they're going to do anything with it themselves. They may not, but if they can plug their USB in and send it to an intermediary, I think there's a real need for intermediaries to take this kind of data and aggregate it and make it meaningful, and then distribute it back out to the provider network.

I think the expectation, as a short-term objective, that we're going to be able to make this happen inside an EMR where the presentation layer is controlled by every EMR vendor is a really problematic sort of market adoption strategy. And I think it may actually be a place where we can facilitate the most

innovation because we can kind of open up the Web and the kind of investment that's gone into the Web to be able to take advantage of patient behavior change, not just to make it possible technically from a business perspective, but also to enable the investment that's going to be necessary to make it happen.

Paul Uhrig – SureScripts – Chief Privacy Officer, EVP Corporate Development
Obviously we agree adoption is the key. I think, just to dovetail how we look at it, and the ability to deliver a richer set of information to the provider, so prescription history form greater sources, so that you have a full picture to offer value by deduping if there are duplicate messages. Providing other care records, and then moving into labs, so to really fill out that information. We find there is a need and a desire by providers to use it when it meets those criteria.

Cris Ross – MinuteClinic – CIO
David?

David Kates – Prematics, Inc. – Vice President Product Management
Will, you may have touched on it in your 30% of 30%, the 10% that you're focused on, and Tom and Paul, you spoke to in your testimony how you were able to go and touch a lot of the physician practices that don't typically run to EHR and get and find advantage from some of the transactions that you're delivering today. Are there any lessons learned or things that you could share or things that we could help facilitate as a committee to either figure out carrots that would drive adoption of some of the things, leveraging the networks you already have in place, or some of the examples you used, Tom, delivering care alerts and the like, being able to essentially sneak it in on things that they're already using in a widespread fashion because there is a compelling business need to get paid for the services they deliver? Are there examples that you have learned collectively from your experiences that we could share?

Tom Morrison – NaviNet – Chief Strategy Officer
Just real quick, I think that the secret to our success, and we now have about 850,000 enrolled providers on our network, is that it was free. Again, it's back to the business model. If you can figure out a way to get somebody on the outside to pay for the delivery of that capability, providers are going to be a lot more acceptable.

Will Ross – Redwood MedNet – Project Manager
Just as a useful metaphor, you're the race officials, and we're running a marathon, and it's early in the race. And so keep running interference for us. Keep establishing bars we can aim for. But let's not kid ourselves how much we're going to accomplish so fast. Let's just focus on getting the adoption that we can and using that as a staging area to get the next round of adoption.

Peter Levin – Department of Veterans Affairs – CTO
I like the race analogy, and here's how I think you can help us. You may or may not have agreed upon the course. I think we know what the beginning point is, and I think we know what the endpoint is. What concerns me a lot is that there is a lot of ambiguity about the difficulty points, about which hurdles were challenging, which creeks we're crossing, which canyons you're expecting us to jump over. I think, in fact, what you really want us to get is at a specific endpoint. So my strong advice, and I think the source of lots of discussions, at least inside the VA, is keep it simple. Don't make your lives too complicated.

Right now, I think one of the greatest barriers to challenge is that we find ourselves, and I'm guilty, more guilty than anybody. We find ourselves debating the fine points beyond the point of any kind of commercial or adoption utility. I think, if we kept things simple, if we could go to the doctor, if I could go to the doctor today and have them know who I am, now the last time I was there, remember my address, and not have to take my insurance card, I'd already be a happier patient. Inside the VA, we have that

benefit already, but the patients that get services from the VA and other places, they don't. You, as the standards committee, you can establish the framework, not the rules, but the framework of keeping things very simple for us.

Cris Ross – MinuteClinic – CIO
Any other questions from the committee?

Aneesh Chopra – White House – CTO
Wes Rishel, you've been quiet. Are you still with us?

Judy Sparrow – Office of the National Coordinator – Executive Director
He….

Aneesh Chopra – White House – CTO
I was wondering. Wes is always--

Cris Ross – MinuteClinic – CIO
The anchorman.

Aneesh Chopra – White House – CTO
--quick to the uptake. Can I just ask one, Cris? I'm looking to the 2013 decisions, and Jamie is exceptional at bringing us back to where we are and what we're doing. Right now, and obviously this rule comment period is open or the process. But by this committee has to advice by 2013 basically two things that are still outstanding. Lots of things, but I'm just going to highlight the two just from this conversation here.

One of those is what does it mean when you transfer a record for continuity of care? Basically right now we say CCD, CCR. Jamie, correct?

Jamie Ferguson – Kaiser Permanente – Executive Director HIT Strategy & Policy
Yes.

Aneesh Chopra – White House – CTO
On the patient side, we are silent, if I'm not mistaken. We say, you have to provide a patient a copy of their summary. So if I just hone in on those two components, my question is whether or not, because this is the innovation panel, if all of you are engaged in an activity to try to get, at least from your world, some clarity around what it would mean to produce those two, to achieve those two objectives. And, if doing so could help inform what the committee should do when we get to the 2013 recommendations because by then you all have innovated some methodology.

For example, Tom, you will have articulated, because your customer base has said so, what the actual ICD-10 mapping to SNOMED, to whatever on problem, you know, all that stuff. To what extent are you working on what you think is the kind of gold standard for those two meaningful use criteria? Are you working on those? Are those things that are being discussed? Are there others engaged so that we know kind of where early adopters are going, as we inform the decision?

Anne is sort of bringing us right back to square one on the question. Do we specify? Do we keep flexible? And, frankly, a lot of this rests on, is the market going to be building better products and services that will inform what both the supply side and the demand side want, so we'll be in a better position, not having to sort of put our finger in the air and saying we guess X. But rather, there'll be some

movement in the market that'll be obvious and demonstrable to say, and here is this new thing. We'll call it the CCX. I'm making it up here. I have no idea. That is some vision of the future that defines the patient scenario or exactly how we transfer the information. I'm just asking the information. Are we too far away from that conversation? Are you working on that?

Sherry Reynolds – Alliance 4 Health – Executive Director
In Washington, two years ago, we were asked. I had a $2 million project to link the EMS system to personal health records, and we didn't have the technology. We weren't really into mobile on that point, and we put them on smart cards, and we had a little reader. The technology was quickly outdated. It's a very secure technique, and now people are working on, for example, when I have a business card and I meet somebody. I don't give somebody a business card anymore. I tap my phone, and I exchange my contact information. There's no reason, in a year or two, for the patients, that you couldn't have something as simple as that. So I think what I would do is separate the two pools into the patient information, which obviously everybody on the panel knows I think should be everything—give me the data, and I'll decide what we're going to do with it—from the clinical information.

An example I try and use is, it's the difference between my bank and Quicken. My bank has everything in it, and I can see it. But I don't put data into the bank, but I can pull all the data out, and I can put it in Quicken. And I can put in cash information and everything else. It's not really a legal document when it's in Quicken, but oddly enough, I can then do my taxes with it. And so there does need to be a way to pull all the info. I can pull it from Schwab. I can pull it from 20 different places, use it, manipulate it how I want to, and add my own information, but that doesn't mean that I'm going to push it back into the bank. I might say if there's an error, but I'm not putting my personal information into the EHR.

Aneesh Chopra – White House – CTO
Let me rephrase my question, Sherry. It's less about the mechanism where we're going to pick.

Sherry Reynolds – Alliance 4 Health – Executive Director
The standard, right.

Aneesh Chopra – White House – CTO
Yes, I'm thinking more about the things that we've all talked about today, the structured content.

Sherry Reynolds – Alliance 4 Health – Executive Director
I'm a big proponent in small cycles of change. You know, it's the quality cycles that we all go through. Pick something, start with it, and move, at least for the clinical side. I don't think you need a standard for the patient side.

W
…part of our problem with that balance is that the perception is, if we pick a standard, it's written in law, and you have to go through a law making cycle to make a change. We need to remove that, and then we can have an iteration on change in the standard.

Aneesh Chopra – White House – CTO
We're the standards committee. Let … the policy discussion….

W
Maybe we need to get that to the policy committee, but that is one of our – that is one of the reasons we're stuck in this place that we are is because we don't want it to be in law because then the law takes longer to pass than the innovation cycle hopefully starts working. I think that's one of our challenges is to

find a way to remove that constraint from what we're doing, and I think we'll get this log jam out of the way.

Tom Morrison – NaviNet – Chief Strategy Officer
One suggestion that I would make is that I think that one of the things that we have to think about from a standards perspective is one way we could do this is to suggest that we ought to have data standards around routing and what the envelope looks like. Back to sort of what NHIN Direct is about. To the extent that we can facilitate the delivery of a package of content, whether it's a quality metric or whether it's clinical data, or whether it's decision support, that can really start to facilitate innovation inside those packages.

The challenge in the market has been, there hasn't been a way to do that, right, because you go to Health 2.0, and there are all kinds of vendors who have very interesting ideas about how to engage patients or clinical decision support components or whatever it might be. The reality is, without some infrastructure work, without some specifications around routing and how these things happen and the communication, it becomes impossible for those vendors to get a foothold in the market. And, consequently, there's no investment.

Carol Diamond – Markle Foundation – Managing Director Healthcare Program
I just want to make a comment for our discussion. I don't think it's a question of, we either specify or we allow innovation. I think it's a question of specifying as much as we need to, to enable innovation, but not more than that. In other words, this is the keep it simple message that I think Peter, you know, emphasized a couple of times. I totally agree with what Tom just said because if we don't specify some of the basic, secure transport requirements, then it almost doesn't matter what you're doing underneath at the vocabulary level because there's no way to get it from one point to the other. You've standardized theoretically, and moving it from one place to another isn't clear. And so, as you said, everybody is going to make up a way to do that, and that's going to create a lot of consternation.

I do think there's a lot of benefit to highly specifying the transport level in the envelope and those kinds of things, and then letting the content, you know, the vocabularies and the content move as they go. So if LOINC is ready, as it has been for a long time, and we create a starter kit, and people can start adopting that, at least they can start to use it to exchange information. Without the higher levels of the stack, if you will, the lower level of the stack, rather, then we can't really get there.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
I think it's possible. Let's verify this with the panelists. As we've heard through the day about giving us a standard, let me ask you a question. Is it because it's not final, because there are obviously lots of stuff out there? No, it's not. It's because it's not specific enough, it's too specific? What are you looking for?

Tom Morrison – NaviNet – Chief Strategy Officer
It's interesting. Several years ago, I did some work for a company in New York. I was doing some strategy work, and they were trying to build benchmarking data around hospital performance using lab data. The way they solved the data problem was they only went to Cerner Labs. By definition, they had the same data model deployed in all of those facilities. What we found very quickly was that because they weren't operationalized in a consistent way, you actually couldn't do any benchmarking, even though the data model was the same.

I think that's part of the challenge that we're dealing with here is that we're relying very heavily on just technology to solve this problem. By creating the kind of model that we're talking about here where you let the content float, then somebody who cares about that content gets to control the presentation layer.

It makes it much easier to control the business rules, so if the communication and the standards around the transport and the package and security and the routing into a workflow, which is critical. We heard that earlier today as well. Those things all have to be in place, but you don't have to specify the content of the package.

Cris Ross – MinuteClinic – CIO
I think that's really key. I want to just sort of step out of the moderator role here for just a second because I'm really sympathetic to what Anne is talking about, but I also keep hearing people say it's not the technology that's the challenge. Exactly to Tom's point, it's around the business model or the workflow or the sort of stuff that rides on top of the technology. And so I think we're really struggling with, on the one hand, having two flavors of the exact same thing can be a challenge for us. But allowing enough space so that we can accommodate everything from David's model where he's trying to glue together things that are outside the traditional care environment, to the VA, which is allowed to be pretty monolithic and control everything end-to-end.

But I think we're maybe struggling a little bit to know where is something where we've got two flavors of the same thing that's unnecessary, and where do we have an instance where we want to be able to allow two different kinds of workflow or two different kinds of business models or an HIE model versus an NHIN Direct model. That's where I think we're also struggling, in addition to the good points you made.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
…earlier because I kept hearing the reason why they have a problem is workflow, not the system. Keep in mind, our panelists now are early adopters. They don't have any system standards that they have to live up to, so they have eliminated the system problem, so I wrote down, well, of course. I wouldn't have any system issues either if I was writing the standard and I was the early adopter and I was in IDF. The real challenge is system and content. It's really both. It's not just one because now we're doing the hard part. The heavy lifting is having both of them together.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
May I say something? This is Dixie Baker.

Aneesh Chopra – White House – CTO
Oh, Dixie.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Yes. I've been trying to get in here for a while. Yes. Actually, my thoughts started in the last panel, but it continues with this one. Dr. Brull made it really clear that she saw the value of structured data in terms of being able to see, to monitor outcomes, to see what worked and what didn't, to look at population data, and I think it's important that we remember that without standard content, we'll never get there. And the objective is not to get bits from point A to point B. The objective is to improve care, and we've got to be able to measure outcomes and to compare outcomes in order to get there.

Tom Morrison – NaviNet – Chief Strategy Officer
One comment to that: I think one of the other things that I think is key in some of this is, again, we're counting a lot on the ability to use this data to do comparative effectiveness and identify best practice. But if you think about what happens in clinical and drug trials, there's a tremendous amount of effort that goes into structuring the collection of that data. And in many cases, and I've talked to some people at ARC and elsewhere who are concerned that this data that if it's not collected in a highly structured way, peer reviewed structured way, you can't really use a lot of the data.

Again, I think there are so many places where the complexity of what we're trying to do here is enormous, and if we can't distribute that complexity into these packages, it becomes very difficult to pull it off. So giving ARC a means to be able to communicate with providers, to collect structured data can be very important in terms of being able to actually come to that sort of peer reviewed result that we need before we're going to be able to change physicians' behavior.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
This is Dixie again. Just reduce it to the very basics. If I send you a packet, and it's got a PDF document in it, and you're running Word, you're not going to be able to tell what it even is. To say that we need to avoid the content, I think, is a bit naïve. I would ask you guys. You're the innovation group. How do we get – is there anything that we, as an industry, as a committee, whatever, can do to get people to recognize, to see the value that, like Dr. Brull did earlier, to see the value that you can get from these EHRs so that they're willing to put up with the pain and the changes in their workflow in order to get the kind of data we need?

Aneesh Chopra – White House – CTO
Maybe last couple comments, Sherry.

Sherry Reynolds – Alliance 4 Health – Executive Director
I sit on the health information technology advisory committee for the Puget Sound Health Alliance, and we do quality results for two million covered lives, and we're currently using claims data, but we'll be moving to the EHR. One of the topics we discuss there, because I sit on the committed, and I do patient advocacy, is to simply provide, at the point of care, quality metrics to the patient. I don't really care if my provider is at 86% or 94%. I want to know in that moment, in that encounter, what the standard of care is, and that's much easier to provide. I don't know if I threw the whole conversation off, but there are different ways to look at how to approach these problems if you, again, put on the patient's hat.

Will Ross – Redwood MedNet – Project Manager
Aneesh, I wanted….

Aneesh Chopra – White House – CTO
Last word, Will?

Will Ross – Redwood MedNet – Project Manager
Yes, I wanted to just answer your original question directly. My sample pool is not very large because I basically connect small, rural hospitals with small practices, but the only site that's asking for a CCD is a site that's running the NHIN protocol. Nobody is asking for CCRs.

Aneesh Chopra – White House – CTO
What are they asking for?

Will Ross – Redwood MedNet – Project Manager
They just want the data to show up.

Aneesh Chopra – White House – CTO
In any format?

Will Ross – Redwood MedNet – Project Manager
It depends on what they have at the endpoint. If it's a chronic disease management software, they want it to show up in their software and, in some cases, it's native HL-7. It's pushing a SQL flat file in there.

Aneesh Chopra – White House – CTO
Therein lies the heart of my challenge, Will. You're at the cutting edge, and even you don't have a market viable platform.

Will Ross – Redwood MedNet – Project Manager
No, I have a tool that can deliver either.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
I think Cris put his finger on it, which is, until there is robust use because there's a business case, it's so hard to get to all the levels of structure that you ultimately want because there's no business model for it.

Dixie Baker – Science Applications Intl. Corp. – CTO, Health & Life Sciences
Exactly.

Sherry Reynolds – Alliance 4 Health – Executive Director
One difference in the early adopters is the VA, Group Health, Partners are closed systems, so the providers who invest in the health IT keep the savings. Until you get the payers into the room, you know, the business case falls apart.

Aneesh Chopra – White House – CTO
Rock and roll, Cris. All done?

Cris Ross – MinuteClinic – CIO
I think that's the end of our panel. Thank you very much.

Aneesh Chopra – White House – CTO
This is going to be an interesting one to attempt to put a summary on all that we've learned today. The simplest and easiest way of describing the morning is that there's a set of federal assets that are coming forward that will help, so we could at least celebrate some of that. There's a clarification at CMS about how Medicaid could be a source of one-time funds from a 90/10 perspective to address the category of, quote, whatever the language she used, insuring the adoption of EHRs. Basically under that language, which will go to state Medicaid directors, there could theoretically be a new category of support that has not heretofore been categorized in a dollar value perspective.

There's a great deal of services that the National Cancer Institute is enabling with actual trial implementations and open specs. So to what extent that there's reusability of any of the work that's been built by the NCI clearly would be interesting.

And there seems to be a great deal of work in the testing environment. We didn't go way in the weeds, Lisa, on the testing aspect of it. We didn't get a lot of dialog there, but we should all presume that there's value in having that system up and running. If not, we certainly … capture it. Yes. That didn't get a lot of airtime, but I presume that that announcement would be helpful.

The interesting question is sort of a process one as well. There may be a lot in mining the documents that are going to be flying around, strategy reports, memos, page 79 of whatever, whatever. I'm not so sure how we, as a group, could mine that in a way that's actually realistic without all the time in the world. But capturing the fact that the immunization, the receipt of the immunization stuff, no one is there. There may be a half a dozen of those sort of on the ground experiences that if there's a way to capture. My immediate takeaway is to ask CMS to figure out ways to bring more transparency, not to the final plan,

but to some of those components of these pre-games so that we can capture the learning. All that on the first panel was my initial summary.

There was a great deal in the middle panel. Boy, there's just a lot to say in the second panel. One of those that I thought was interesting was whether or not there's some kind of hosted vendor summit that brings people together. There was the sort of failed attempt that Cerner tried to have, and crickets were chirping, and no one showed, but an offer to bring them in again.

And a question to the group whether there's a role to play from a third party vehicle. I don't know who that vehicle is or how, but we heard that there may be a chance to get people in the game. Frankly, Anne, to bring this question to the table: Is there or is there not going to be some industry concensus around the mechanics of what we're asking for? I don't know what we'd do about that as a recommendation, but if there is this sort of beyond the floor summit that brings some of those folks together, there could be some interesting learning. Sumit is the only one left here. Maybe we could lean on him to make sure that the message is sent back.

I didn't quite figure this out. The RAC audit data specs as a proxy for consumer requirement, did anyone else hear that? That is, the people who are providing the—

M
….

Aneesh Chopra – White House – CTO
Yes, I didn't track that either. Basically what I'm guessing is, and the hospital can tell me if I'm wrong, basically, and I should now this, but I don't. When there's a RAC audit in Medicare, I guess presumably they pull an electronic copy of a patient file, and they have probably a data spec to call for that. I don't know if that's true or not. Judy, you may know more than I do.

Judy Murphy – Aurora Healthcare – Vice President of Applications
I think the reference was actually related to the fact that that got real specific real fast, and everybody knows what it is, and so I think they were using that as an analogy to say that's how simple this should be.

Aneesh Chopra – White House – CTO
I see. The fact that that spec was there, and everybody has adhered to that spec instantaneously.

Judy Murphy – Aurora Healthcare – Vice President of Applications
Everybody knows what it is.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
That's exactly….

Aneesh Chopra – White House – CTO
Thank you. I was not tracking that one very well. I also heard a great deal about, I mean, obviously, Cris, you put the nail right on the head. Is the market wanting it? Is there an import demand piece? That's a very, very important question, and I don't know if we could … yes…. How are we going to find a group of people to tell us that they are in fact putting that requirement work together, so we could see what the future will look like to inform our work? I don't know if we go back out to see who is out there doing this kind of stuff, but we didn't hear a lot of that today.

M
...export is factor one X. Import is factor 10 to 100X in terms of difficulty and cost and all that stuff. It's not a surprise, but I think it's a fair bet to say, is it ever going to.

Aneesh Chopra – White House – CTO
Correct.

M
And we heard examples of where there were market dynamics where there's demand that were driven around prospectively, pay for performance and things like that where people were, either from a competitive standpoint or from a reimbursement standpoint, looking forward to being able to manage a population of patients, but it's not there yet.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
I think the challenge, though, that we have is that if we don't have an import spec, the data will be incomplete, and we're caring for patients when part of – if you go back to the original kind of, I don't know, impetus for this whole thing was that we would have complete data, and we wouldn't have to replicate diagnostics, and we wouldn't have to replicate that work. With no import, we don't accomplish that. Think about what Obama said. Think about al the way back to David's original words where we would have the data. You're absolutely right, but I also think….

M
But that's an imperative around what's the right thing to do, not necessarily what people are getting paid to do.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Right. I do also think, though, if you look at the panel that we selected, those are CIOs that have to deliver. That's why we selected them because they're the people that are delivering in our provider organizations, but they are so in their face with right now, right here, and they're delivering to that, so they are not thinking. They haven't figured out how to overcome the first hurdle, so they can't be visionary right now. They are trying to be very pragmatic.

W
Burden of ICD-10.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Exactly.

W
And 5010.

M
Exactly.

W
One of our guiding principles from the first hearing, if you recall, was something like accept anything, but send it right. You know, in other words, be very structured in what you send outbound, but be able to take anything inbound, and that was one of our ten. Yes.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect

We haven't gotten there, have we?

W
Yes.

Aneesh Chopra – White House – CTO
The uplifting side of on the third panel is that there's a lot of moment around the extension centers convening in the coming weeks. I'd be curious to get a report out on what their shared requirements are going to look like. That might be an interesting….

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
…opportunity for us in terms of planting the seed of what we're hoping for here.

Aneesh Chopra – White House – CTO
Well, I am presuming, because this body is advising David, and we've got staff around the room that we're going to absolutely make sure. I'm assuming that's an HHS convened summit. I don't actually know what that summit is. We'll find out. Whatever it is, we're going to get all over it.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
We could plant some of the seeds of what we're finding empty here.

Aneesh Chopra – White House – CTO
Absolutely. Yes. I don't know the best way to do that other than to find out if that is an open meeting, how we get the word out to folks and, frankly, insure that our A's and B's are coordinated, so we'll get on that.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
Also, are the HIE designated groups getting together as well?

Aneesh Chopra – White House – CTO
Yes. Is there a similar movement there?

Judy Murphy – Aurora Healthcare – Vice President of Applications
Let me find out.

Aneesh Chopra – White House – CTO
Let's find out. That's an important. That's an exciting movement if that movement is happening and worth to see what's happening, so we can get down the road. I was a little bit bummed out to hear that the guidance on the lab interfaces were not exactly the homerun out of the park, so maybe it's worth some further thinking of whether that's addressed the concern. We heard that at our first hearing, and then we heard a little bit of a good movement in the right direction, but it hasn't solved the problem. I certainly want to make sure we're trying to get there. Then clearly this notion of getting this, you know, Jamie had to leave, but getting this content and vocabulary question and then transport layer. We keep going back and forth. Does it matter? Does it not matter? Should it matter? How should it matter? I think we're going to have to keep—

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
…policy problem where if we could get the standard, whether we decide a minimum or whatever it ends up being in discussion out of the lawmaking.

Aneesh Chopra – White House – CTO
No. Actually, Anne, let me take that head on. My presumption, and again, I'm not speaking beyond what is known. My presumption is that the NHIN vehicle allows for an unregulated. On other words, it's not in the law.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
That's why I like the NHIN because they seem to be creating a standard. It's being effective. It's being used, and people are saying, can I skip the HIE. I like that.

Aneesh Chopra – White House – CTO
I think that's an interesting question because we don't have specs on the HIE in the meaningful use requirements.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
No.

Aneesh Chopra – White House – CTO
But to the extent that to enable meaningful use, there are specs in the NHIN, that is the entirety of its design. Is Fridsma still around? There he is. So you're catching this, this tension, and you're all over this. Did I mischaracterize that? So my presumption is, Anne, we should be as advisory to the administration. You're advising the administration. I'm wearing all these hats today. But in a sense, the brainpower around the room in many ways, you're not prohibited from advising David on how to take full advantage of the NHIN to achieve some of the issues that this group is hearing.

I don't presume there's a limitation unless I hear otherwise, and I'll go back to David about what he wants this group to engage on. But I don't envision a conversation that says, hey, you should take full advantage of the various components of NHIN to reconcile some of these issues without having it be in the recommendations for 2013.

Dr. Brull is still in the back. This notion of quality registries, your 2004 hypertension registry, in a sense, set the spec. My presumption is you knew what clinical values you were going to monitor. You knew how to get the numerator and the denominator. Then you took action on it. In a sense, that predated any electronic software implementation, so there are examples where you can get the content in a way that's right.

Remember in our first hearing, we heard two testimonies on quality reporting. We heard four people, but two represented kind of the HIE-ish way of doing it, and two represented medical registry ways. We saw a divergence in how they were defining the requirements, and I'm just curious if we chew on that more as we go. The registry side of the house might be a faster path to getting this question of content and transport clarified. I don't know if the market is going to….

M
In some ways, there's sort of practical quality improvement like a QI committee might do and an academic quality improvement, which is testable, peer reviewed, and then actionable. I'm not sure we've teased out all that tension yet. A QI committee is going to work with imperfect data to try and help patients today.

Aneesh Chopra – White House – CTO
That's what I heard Dr. Brull describe. She's sitting there in the back. I don't know if I'm teasing on you, but in a sense, yours was not peer reviewed, scientific to the Nth degree in 2004. It's like just a group of doctors saying, how do we look at this, and how do I think about this data better? That learning is very,

very helpful to think about what it is that we do to get things moving now. I'm going to run out of gas in terms of my summaries for the meeting, but there were some clear clinical outcomes links to the registry piece that I thought could help to be a path forward.

I'm done with my attempt at summarizing. There may be a word or two.

W
I have just one thing. The population health concept was very strong. When Jim was talking about, as you look across the population, and began to recharge your approach, as you think about data and the real value and quality of care. You said I had a blood pressure that certainly wasn't abnormal, but because I know the population I was dealing with, I went back and said it may not be at high extremes, but because I can collect this data, really strong concept … really different.

Anne Castro – BlueCross BlueShield South Carolina – Chief Design Architect
I was going to make that same point and say that I think one thing that panel had in common was their implementation of HIT, even at the practice level, was about improving quality. It was about achieving some benchmarks, and I think that's what drove them in the direction they went in, which they went in before meaningful use. So it's a very different conversation sort of post meaningful use, sort of as a compliance issue versus setting the quality targets and saying this is what the IT is going to have to do for us, and we're going to find a way to do it.

Aneesh Chopra – White House – CTO
We have a couple minutes left. We have to reserve time for public comment. Can we start that now, and then we can see if there's any last things, because we want to get out of here in a timely…?

Judy Sparrow – Office of the National Coordinator – Executive Director
Anybody in the room cares to make a public comment, please come up to the microphone in the isle, and anybody on the telephone. Please remember to state your name, organization, and keep your comments within three minutes. Richard Singerman?

Richard Singerman – BioQuest – President
Richard Singerman. Given what we've heard today, I would actually encourage that the group either focus on or create a new subgroup that's focused really on disruptive innovation and value creation, to really give a very, very tight focus because I think the things we've heard today haven't been heard a lot before. And so I'd like to kind of espouse of three principles around that and then three quick examples.

First of all, new care models and applied research will create what I call new knowledge capital. That is, new relationships, new infrastructures, and new people skills, or what we've been hearing as trust, standards, and training.

Secondly, just as the development of the rest of the Internet, promote the ecosystem infrastructure and observe what others do with it. A great example was Dr. Buetow's work with NCI and caBIG. They created an infrastructure, the cancer researchers, and there was an economic incentive because of the translational research grants coming out of NCI. There's direct economic incentive for researchers to share beyond their institutions, which drove a semantic interoperability. That is, the different researchers had to be on the same page for how their research results were being reported out.

Now they may talk about it differently within each of their institutions, within each of their silos, if you will, but once they go onto the NHIN of research, if you will, they all have to be speaking the same language. And some organizations will use a few tools and have their own home built tools. Others will use more of

the tools of caBIG, but they have to report out the results of those tools, let's say through some translator mechanism, so that they have a common language, which addresses that first part of the knowledge value change that is the quality and accuracy of the data.

Thirdly, and I think what's very key, is for adoption. Remember, adoption has been studied a lot over the last half century. In particular, Rogers has this standard hockey puck curve where he looked at what were the key factors. There was clear value. There's the ease of trying little things like modular EHR adoption, and leveraging opinion leaders. And I would add to that now in our era, opinion leader/social networking, so that if you have something like FaceBook or LinkedIn, you see not only what you're looking for, but you get surprised. Oh, I was trying to link in these people. Oh, look. There are other people who I should be looking to.

We did this. I ran innovation in Ascension for four years. Ascension Health is the largest Catholic hospital system. And we created an EBIV innovation, and there were these equivalent level five HIT entities that were great adopters and had lots of resources, but they were also very small organizations that came up with new business models. So a small hospital, St. Anthony's on the south side of Chicago, didn't really have the capacity to deal with high complexity pregnancies. The academic medical centers really wanted high complexity pregnancies instead of standard pregnancies. And so they traded, and they optimized capacity. Essentially it was an impedance mismatch, and they matched them. There was a new business model, and it was win/win for both sides.

Another wonderful example that's appearing, nighttime pediatrics, if you go there with your child, you can schedule, and I did this two weeks ago. I scheduled at 2:00 in the afternoon for an 8:00 p.m. visit. I went in there. I had an electronic clipboard that I filled out there. I put in my insurance card, the preexisting conditions. They had my doctor's information so that they could send it the next day to them, but the next time I go to nighttime, they've got it, and they've got that clipboard that the previous Secretary Levit always talked about, so these innovations are happening.

If you look at the military health system, they have novel ways of leveraging their infrastructure. When it's soldiers in their system, at the point of care, a doc can see a drug/drug alert. But if it's family members of the military health system who are getting normal insurance, just like you and I, and are not seeing MHS docs or going to those hospitals. Then, at the point of receiving the prescriptions or at the point of prescribing, they get an Rx alert, again, novel ways of leveraging the infrastructure. You might not have expected it at first, but it was value driven.

At the military health system, the military bases get budget incentives for compliance to things like pap smear testing and that sort of thing and prostate testing. We have examples of new value creation and new innovation models through the disruptive innovation. I'd say, from what we've heard today, I would promote either a study that tends to aggregate more of this to get the word out, or a tightening of the focus of this group or, more appropriate, a newer group because you really have two streams. You have the stream of let me do incrementally, how do I adopt my EHRs and move step by step by step through this process.

But then you have new care models, so we're not asking docs or nurses to change, but they have decided to change and to create new forms of capacity, which better match resources. If you want to talk about meeting goals, lower costs, and improving care, I think you need that disruptive innovation to have the capacity matching. Thank you.

Judy Sparrow – Office of the National Coordinator – Executive Director
Thank you.

Aneesh Chopra – White House – CTO
Thank you for that. There are a couple more left, and are going to leave at 4:00.

Cindy Drew
I promise I'll be faster than that. I'm Cindy Drew, and I just have a comment about interoperability and data standards. That's something that I'm very passionate about, more so than transport standards. I'm wondering if you've looked at what has been done internationally in terms of developing data standards. There are people in the U.K. and Australia who have been developing basically these data archetypes for standardizing the actual content of what the data that gets transported. This is like clinical data, the data about patients. They've been doing this for years. It's been an iterative process. I'm wondering, and so I'm asking and suggesting that we look to them at the work they've done. They're years ahead of us on doing this, so it's important, and have you heard of it?

Aneesh Chopra – White House – CTO
Great. Thank you.

Judy Sparrow – Office of the National Coordinator – Executive Director
Thank you.

Aneesh Chopra – White House – CTO
Anyone else on the phone?

Judy Sparrow – Office of the National Coordinator – Executive Director
No.

Aneesh Chopra – White House – CTO
All right. With that, Liz, do you want to round us out, ye hoster of this amazing forum?

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Just thanks to all who came and certainly this is not a one person show. There were lots of people around this room, Cris, Judy, Carol, Linda, Judy Sparrow, John. I mean, just look around the room. We all did this, Aneesh, and so there you go.

Aneesh Chopra – White House – CTO
Was it a productive dialog today? Did we gather good info? I want to make sure that we're – and we'll certainly, before the next committee, we'll find a way to kind of synthesize some of the learnings for us, as we did last time, and share them back with the group. All right.

Elizabeth Johnson – Tenet Healthcare – VP Applied Clinical Informatics
Thank you.

Aneesh Chopra – White House – CTO
Let's go. Thank you all very much. Great job.